

**UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY**

**SALVATORE BADALAMENTI, on behalf of
himself and the Putative Class,**

Plaintiffs,

v.

**RESIDEO TECHNOLOGIES, INC. and
HONEYWELL INTERNATIONAL INC.,**

Defendants.

Case No.:

Civil Action

**CLASS ACTION COMPLAINT
AND JURY DEMAND**

Plaintiff, Salvatore Badalamenti, by his attorneys, Poulos LoPiccolo PC, on behalf of himself and all others similarly situated nationwide, brings this Class Action Complaint against Defendants Resideo Technologies, Inc. and Honeywell International, Inc. (herein “Defendants”), and alleges as follows:

PARTIES

1. Plaintiff is a citizen of the State of New Jersey and resides in Little Ferry, New Jersey, where he owns his home.
2. Honeywell International, Inc. (“Honeywell”) is a manufacturer of, inter alia, home security products and is a Delaware Corporation with its principal place of business at 300 S Tryon St Suite 500, Charlotte, North Carolina.
3. Defendant Resideo Technologies, Inc. (“Resideo”) is a manufacturer of, inter alia, home security products and is incorporated in Delaware with its principal place of business at 901 E. 6th Street, Austin, Texas. Resideo was formed in 2018 out of a spin off from Honeywell.

NATURE OF THE ACTION

4. This action arises from the dangerous and serious defects, dangers and non-conformities in all combination-listed single data-bus burglar and fire alarm system control units that were manufactured and sold by nationally recognized equipment manufacturers Honeywell® and its former affiliate Resideo®. The serious defects, dangers and non-conformities which Defendants have known about for years, and/or were required to know about for years, and long before they designed, sold, and put their products out into the stream of commerce can lead to an instantaneous and catastrophic failure of the alarm system's combination-listed control unit during a fire. In this dangerously silent and non-functional state, instead of the alarm system performing its crucial life safety function by audibly warning all occupants inside the home of the fire emergency and the central station, the combination listed control unit fails. Consequently, the alarm system cannot warn families of the imminent life safety danger within their home, allowing for their timely escape before the premises become untenable.

5. The propensity for serious personal injury and/or death is both dramatically and foreseeably increased without all occupants in the home having the early warning and the window of opportunity needed to escape from the premises during a fire emergency.

6. As a result, persons inside the home may not wake up and/or they may die as a result of inhaling toxic fumes and/or they may become overcome by smoke inhalation and/or they may breathe in dangerous levels of carbon monoxide and/or they may become disoriented and/or they may become trapped inside the home due to fire and/or smoke conditions with no path to escape.

7. At the same time, without the central station being alerted to immediately notify the fire department, firefighters will not know to respond rapidly to help locate and take occupants

from inside of the home, to safety and out of harm's way. Additionally, if occupants of the home escape it would not be likely to occur without serious personal injury or death happening.

8. The dangers inherent in these control units renders them non-conforming to the minimum standards required by both UL and NFPA 72 Standards. [(UL) Underwriters Laboratories, Inc., UL-985 and UL-1023, and NFPA 72 Standards- National Fire Alarm Code and NFPA 72 National Fire Alarm and Signaling Code.] Notably, before the Defendants submitted their equipment to be listed by a Nationally Recognized Testing Laboratory (NRTL) such as UL-Underwriters Laboratories, Inc. – they were required to verify that their equipment was conforming.

9. If the data-bus circuit wiring is faulted and/or shorted anywhere it is installed throughout the home by fire, such as in the common areas, in the wall, attic or basement, the non-conforming control unit is instantly rendered non-functional (the “Alarm System Defect”). In gross contrast, if the combination listed control unit was conforming, fire attacking the single data-bus circuit of the combination listed control unit or any equipment that is required to connect to the single data-bus of the combination listed control unit shall not cause the system to be rendered non-functional, since conforming to both UL and NFPA 72 Standards specifically prohibits this loss of functionality from happening. Similarly, the State of New Jersey also requires compliance with the aforementioned, through the Uniform Construction Code, the Uniform Fire Code and NFPA 72.

10. Plaintiff brings this action for actual damages, equitable relief, including restitution, injunctive relief, declaratory relief and disgorgement of profits, and all other relief available on behalf of himself and all similarly situated individuals and entities (the “Class”) who own

combination listed single data-bus residential burglar and fire alarm system control units that were manufactured or sold by Defendants (the “Alarm Systems”).

11. All the claims asserted herein arise out of the design, manufacture, advertising, promoting, marketing, distributing, selling and representing that their Combination Listed Household Burglar and Fire Alarm System Control Units met the requirements set forth in the applicable sections of both UL and NFPA 72 Standards making them listed for their intended purpose, safe and reliable. However, these representations were false.

12. Defendants knew or should have known before the time it sold their first Combination Listed Household Burglar and Fire Alarm System Control Unit Alarm System, that their control units were defective, dangerous and non-conforming to both UL 1023/UL-985 and NFPA 72 Standards.

13. The combination-listed control unit deficiencies and non-conformities dangerously and needlessly expose all occupants to an increased risk of property damage, serious personal injury, and/or death.

14. Defendants concealed these serious defects, dangers and non-conformities from consumers and/or failed to disclose the Alarm System Defects to Plaintiff and the class, while at the same time affirmatively representing the high quality and safety of their control unit systems meeting both UL and NFPA Standards. Defendants failed to remove these Alarm Systems from the marketplace and they failed to take appropriate remedial action, even though Defendants were aware that the single data-bus circuit of their combination listed control units was non-compliant to UL and NFPA regulations. Instead, Defendants marketed and sold their combination listed control units, even though it knew and/or should have known that it was non-conforming and was both defective and dangerous. The Defendants concealed these material defects from consumers

who relied on the Defendants combination listed control units for their security and life safety protection but it was to no avail.

15. Had Plaintiff and other members of the Class known of the Alarm System Defects and non-conformities at the time of sale, they would not have purchased the Defendants combination listed control unit. This information would have provided them with the opportunity to select code-compliant equipment. Notably, the Defendants combination listed control units did not, and do not even meet minimum fire code requirements as is required in New Jersey and Nationwide under both UL and NFPA Standards.

16. Plaintiff and the Class have suffered an ascertainable loss because of Defendants' affirmative misrepresentations and omissions associated with the Alarm System Defects, including but not limited to, out of pocket losses and diminished value of the Alarm System.

17. Plaintiff seeks actual damages, injunctive relief, restitution and/or disgorgement of profits, statutory damages, attorneys' fees, costs, and all other relief available to Plaintiff and the Class.

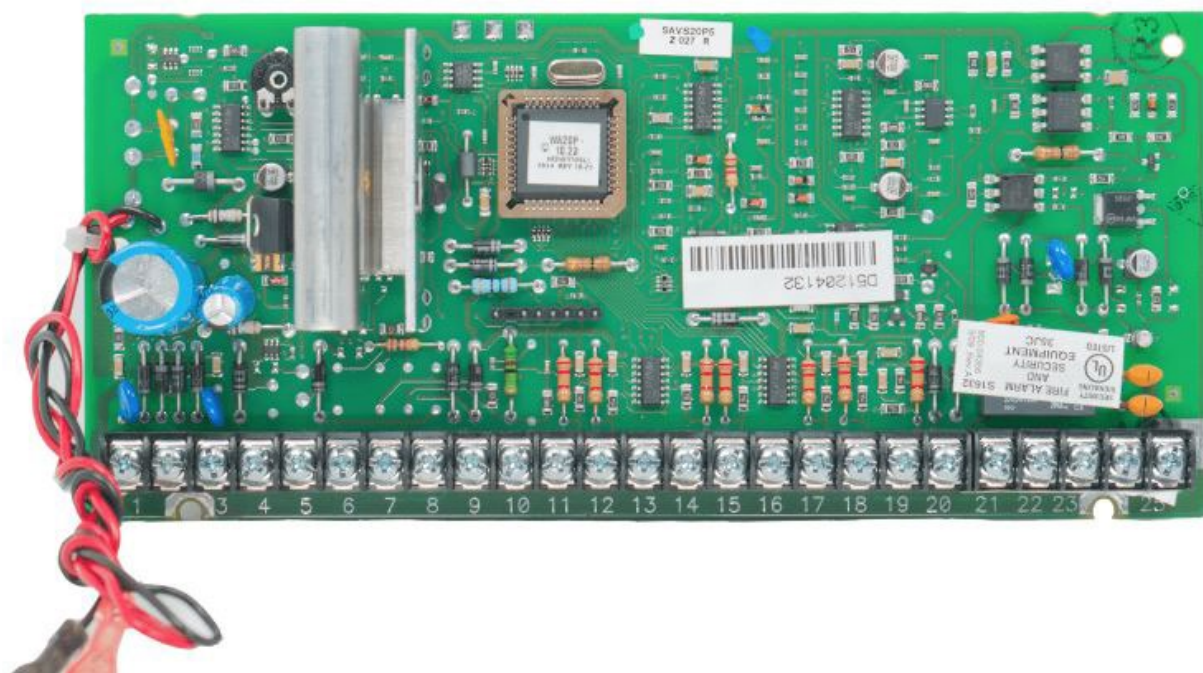
PLAINTIFF'S EXPERIENCE

18. Plaintiffs owns a home located at 9 Taylor Street, Little Ferry, New Jersey, 07643.

19. Plaintiff had a combination listed burglar and fire alarm system control unit installed in his home in or around 2016 consisting of a Model Honeywell Vista 20P control unit.

20. The Honeywell Vista 20P combination listed control unit represents that it is UL listed and meets NFPA 72 standards.

21. These photos of the Honeywell Vista 20P Combination Listed Control Unit schematic and circuit board respectively, makes these representations:



22. The installation guide for the Honeywell Vista 20P Control Unit represents that it complies with the NFPA. Further, the Honeywell Vista 20P product detail sheet states that their control unit complies with UL 985 and UL 1023. A copy of the installation guide and product detail sheet is attached hereto as **Exhibit A**.

23. By the Defendants representing to consumers that the alarm system equipment is UL listed and meets NFPA 72 standards it is representing that it meets the minimum statutory standard requirements including UL 985 and UL 1023, and the relevant provisions of NFPA 72 regarding Combination Listed Burglar and Fire Alarm Control Units as is described in more detail below.

24. Despite these false representations, the single data-bus “combination listed” control unit(s) such as the Honeywell Vista 20P control panels that were purchased by Plaintiff and installed in his home contains the Alarm System Defect and thus were both non-conforming and does not and/or never complied with NFPA 72, UL 985 and UL 1023 respectively.

25. In August 2022 Plaintiff first learned that the Honeywell Vista 20P Control Unit that was installed in his home contained the Alarm System Defect and was non-conforming.

26. Had Plaintiff known that the Honeywell Vista 20P Control Unit that was installed in his home contained the Alarm System Defect, he would not have purchased it.

JURISDICTION AND VENUE

27. This Court has subject matter jurisdiction over this action pursuant to the Class Action Fairness Act of 2005, 28 U.S.C. §1332(d)(2), as the Class contains more than 100 members, at least one of whom maintains citizenship in a state diverse from Defendants and seeks in the aggregate more than Five Million Dollars (\$5,000,000.00), exclusive of costs and interest. This Court also has personal jurisdiction over the parties because Defendants conduct substantial

business in New Jersey, and all Defendants have had systematic and continuous contacts with New Jersey and has agents and representatives that can be found in this State.

28. Venue is proper in this district pursuant to 28 U.S.C. § 1391 because Plaintiff is a citizen of this judicial district, a substantial part of the events giving rise to the claims set forth herein occurred and emanated from this district, and all Defendants conduct has injured members of the Class residing in this district. Accordingly, this Court has jurisdiction over this action, and venue is proper in this judicial district.

TOLLING OF STATUTE OF LIMITATIONS

29. Any applicable statute(s) of limitations has been tolled by Defendants' knowing and active concealment and denial of the facts alleged herein. Despite their due diligence, Plaintiff and the other members of the Class could not have reasonably discovered the Alarm System Defect and Defendants have not only concealed the Alarm System Defect, but they failed to timely effectuate the necessary repairs.

30. Defendants were and remain under a continuing duty to disclose to Plaintiff and the other members of the Class the true character, quality, and nature of the Alarm System Defect, that the Alarm System Defect poses serious life safety concerns and unreasonable risks to all occupants of the home, and both eliminates the "alarm system" life safety benefits to the Plaintiff and diminishes the value of the Alarm System to Plaintiff and the Class. As a result of the active concealment by Defendants, all statutes of limitations otherwise applicable to the allegations herein have been tolled.

31. Moreover, because the Alarm System Defect could not be detected due to Defendants' purposefully fraudulent concealment, Plaintiff and the Class were not reasonably able to discover the Alarm System Defect until long after purchasing the Defendants Combination

Listed Burglar and Fire Alarm Control Unit, despite their exercise of due diligence. Thus, the discovery rule is applicable to the claims asserted by Plaintiff and the Class.

32. Any applicable statute of limitation has therefore been tolled by Defendants' knowing, active concealment and denial of the facts alleged herein. Defendants are estopped from relying on any statutes of limitation because of its concealment of the Alarm System Defect.

FACTUAL BACKGROUND

The Reasonable And Legitimate Expectations Of Plaintiff And The Members Of The Putative Class

33. Consumers purchasing Alarm Systems reasonably and legitimately expect that they properly and safely function and operate for years, particularly in the event of an unpredictable fire emergency happening in their home.

34. In purchasing an Alarm System, Plaintiff and the other members of the Class reasonably and legitimately expected the Alarm System to be reliable, and to operate in accordance with all applicable codes and standards – including immediately sounding an audible fire alarm inside the home so that its inhabitants would be immediately warned of a fire emergency, and, as a result, be able to escape from the home before the premises become untenable.

35. In purchasing the Alarm System, Plaintiff and the other members of the Class reasonably and legitimately expected that the Alarm System would be free from the Alarm System Defect(s).

36. The existence of the Alarm System Defect(s) is a fact that would be considered material to reasonable consumers deciding whether or not to purchase this Alarm System equipment.

37. Customers like Plaintiff and the other members of the Class, reasonably and legitimately expect and assume that an Alarm System will function in its intended manner, and will not be subject to catastrophic failure in the event of a fire, which is the very thing that the combination listed control unit is supposed to be designed to detect, and protect the Plaintiffs against, so that it can warn all occupants in the home of a fire emergency. Plaintiff and the other members of the Class also reasonably and legitimately expect and assume that Defendants will not sell Alarm Systems with a known defect, will disclose any such Defects to consumers when they learn of them, and take all steps necessary to remedy any defect in a manner that does not cause dangers, an increase in the risk of serious personal injury and/or death and additional cost to consumers.

38. It was reasonable and legitimate for Plaintiff and the other members of the Class to expect Defendants not to conceal serious defects and non-conformities from them – such as the Alarm System Defect described herein, and to deny the existence of these defects for years after becoming aware of the problems.

39. Had Plaintiff and other members of the Class known about the Alarm System Defect while they were in the market for purchasing an Alarm System, they would not have purchased this Alarm System due to the increased risk of its instantaneous failure during a fire, foreseeably resulting in loss of property, serious personal injury and/or death.

The Alarm System Defect and Defendant's Awareness of the Defect

NFPA 72- National Fire Alarm Code and NFPA 72- National Fire Alarm and Signaling Code

40. The National Fire Protection Association (NFPA) has indicated that 60% of residential fire deaths occur when smoke detection is not present or disabled. See Ahrens, M. Smoke Alarms in US Home Fires. NFPA Research Report. 2021. Thus, many homeowners across

the country install fire alarm systems to alert them to a potential fire in their homes which could ultimately save their lives. Most of these home systems contain combination listed burglar and fire alarm control units.

41. All household combination listed burglar and fire alarm system control units contain a single data-bus circuit. The data-bus circuit consists of four wires that are required to be terminated onto the systems circuit board. Two of the wires consist of the data side of the data-bus circuit, and the other two wires are for the (+) and (-) 12 volts of DC power that is needed to operate the data bus. In order for the alarm system to function, the data-bus terminals in the control units are wired to alarm system equipment that is installed throughout the home or business. This alarm system equipment includes but is not limited to remote system keypads, wireless radio receivers, wireless radio alarm transmitters and zone expansion modules. A diagram of the single data-bus combination-listed burglar and fire alarm control unit is attached hereto as **Exhibit B**.

42. Combination Listed Household Burglar and Fire Alarm System Control Units are governed by UL Standards – Underwriters Laboratories, Inc – specifically UL-1023 Household Burglar-Alarm System Units and UL-985, Standard for Household Fire Warning System Units as well as NFPA 72 Standards, specifically NFPA 72,[®] National Fire Alarm Code and/or NFPA 72 National Fire Alarm and Signaling Code. NFPA 72 is recognized as the most authoritative standard for fire alarm systems nationwide. It is adopted by reference in most, if not all, model building codes and some version of NFPA 72[®] is adopted in some manner in every state in the nation (NFPA Codefinder, 2022).

43. NFPA 72[®], National Fire Alarm Code covers the application, installation, location, performance, and maintenance of fire alarm systems and their components. NFPA 72[®],

National Fire Alarm and Signaling Code provides the latest safety provisions to meet society's changing fire detection, signaling, and emergency communications demands. In addition to the core focus on fire alarm systems, the Code includes requirements for mass notification systems used for weather emergencies, terrorist events, biological, chemical, and nuclear emergencies, and other threats.

44. Alarm equipment manufacturers have a duty to comply with UL Standards and NFPA 72 Standards for Household Occupancies. Both UL Standards and NFPA 72 are adopted by most Authorities Having Jurisdiction across the country and NFPA 72 is considered both an authoritative treatise and statutory duty in most jurisdictions.

45. Section 29.10.7.5 of the NFPA 72 Standard states that “faults in other systems (such as a burglar alarm system) or components, shall not affect the operation of the fire alarm system.” Notably, the word “shall” in NFPA 72 has always constituted a mandatory requirement.

46. Section 29.10.7.6 then states:

Where common wiring is employed for a combination system, the equipment for other than the fire and carbon monoxide alarm system shall be connected to the common wiring of the system so that short circuits, open circuits, grounds, or any fault in this equipment or interconnection between this equipment and the fire and carbon monoxide alarm system wiring does not interfere with the supervision of the fire and carbon monoxide alarm system or prevent alarm or trouble signal operation.

47. These crucial requirements have been in NFPA 72 Standards since 1999. A matrix summarizing the section numbers of the various editions of the NFPA 72 over the years since 2002, where the requirements in the current section of 29.10.7.6 is/was located, is attached hereto as **Exhibit C**.

Underwriters Laboratories, Inc. (UL) Standards

48. “Since 1894, UL has conducted rigorous independent research and developed safety standards to improve living and working conditions throughout the world...” They “publish consensus standards that guide the safety, performance, and sustainability of new products and evolving technologies and services delivering solutions that range from household appliances to smoke alarms, from batteries and building materials to cybersecurity and autonomous vehicles.”

See <https://ul.org/about>.

49. Defendants submitted their Combination Control Unit to UL to have it tested for compliance with applicable UL Standard 1023, UL Standard 985 and NFPA 72. However, the Defendants knew or were required to know that its product was non-conforming before it submitted its equipment to UL.

50. UL 985 describes the Standard for Household Fire Warning System Units.

51. UL 1023 describes the Standard for Household Burglar Alarm System Units, including the use of combination listed fire-burglar alarm system control units.

52. Alarm equipment manufacturers whose equipment is listed to UL 985 are also required to comply with NFPA 72 Standards.

53. UL 985, Household Fire Warning System Units, 5th Edition published 2000, states:

1.4 These requirements also apply to the use of combination systems, such as a combination fire-burglar alarm system control unit, which uses circuit wiring common to both systems. When common wiring is used for combination systems, it shall be connected in such a manner that internal fault conditions (shorts, opens, grounds) in the nonfire alarm (burglary) system circuit wiring, or faults between the fire and nonfire alarm system circuits, will not interfere with the supervision of the fire alarm system or prevent intended alarm signal transmission.

54. Additionally, from 2000 to 2015, the following summarizes the requirements in the 5th Edition of UL 985:

41.4 An open or ground fault in any circuit extending from a household control unit, other than the initiating device circuit, shall not affect the operation of the control unit except for the loss of the function extending from that circuit.

41.6 A fault condition, open, ground, or short of other than a fire alarm circuit of a combination control unit shall not affect the fire-alarm signaling.

55. The 5th Edition of UL-985- Household Fire Warning System Units at Section 41.4 has been incorporated into the 6th edition of UL-985 standards at section 44.2.3 to present day. The 6th Edition of UL-985 was published in 2015 and had its effective date in November of 2019. Notably, the 6th Edition of UL 985 sets forth more stringent requirements as follows:

Section 41.3.1.3 – Short circuit or open circuit single faults in the non-fire equipment or in the wiring between the non-fire equipment and the fire alarm system shall not impede or impair the monitoring for integrity of the fire alarm system, nor impede or impair any fire alarm signal transmissions or operations.

Section 41.3.1.6 – The required operation of the fire alarm equipment shall not be impaired by any failure of the non fire alarm equipment hardware, software or circuits, or by any maintenance procedure, including removal or replacement of defective equipment or powering down of the non-fire equipment.

56. UL 1023, Standard For Household Burglar-Alarm System Units 6th Edition published 2015 (Nov. 2019 effective date) states, in pertinent part that:

Section 1.3 – These requirements also apply to the use of combination systems, such as a combination fire-burglar-alarm system control unit. A combination system is connected in such a manner that fault conditions (shorts, opens, grounds) in the burglar-alarm system circuit wiring, or interconnections between the fire and burglar-alarm system circuits, will not interfere with the supervision of the fire alarm system or will not prevent intended alarm signal operation.

Section 1.4 – A combination household fire and burglar alarm system shall also comply with the Standard for Household Fire Warning System Units, UL 985.

57. The requirements of UL 1023 at sections 1.3 and 1.4 have been part of UL standards since 1996.

58. All of these requirements set forth that UL-985, in combination with UL-1023, and NFPA 72, universally mandate that all household combination listed control units are protected from a short circuit condition being introduced onto to the non-fire alarm equipment and/or its wiring, causing the fire alarm system to being rendered non-functional. Notwithstanding, the Defendants' dangerous and non-conforming combination listed control units, catastrophically shut down, as a result of the introduction of a short circuit condition as elaborated above causing this failure, since the Defendants equipment violates the minimum requirements of UL and NFPA 72 Standards and it is strictly prohibited.

59. The parallel hardwired connection requirements on the circuit board of the Defendants combination listed control unit requires that the four (4) conductor single data-bus circuit(s) be terminated in parallel, with all of the other devices that are also required to be connected in parallel to the data-bus circuit for functionality, such as wireless receivers, dialer capture and platform wireless radio alarm transmitters, zone expansion modules, and input/output modules.

60. On the other side of the technical spectrum, the Auxiliary DC power output circuit terminals of the control unit, have been specifically designed by the Defendants to require both the Auxiliary DC power output, and the DC power that is required for the data-bus circuit to reside (be terminated) on the very same positive (+) and negative (-) terminals of the control units circuit board. Likewise, the auxiliary DC power that is required for burglar alarm intrusion detection devices, such as audio glass break detectors and motion detectors are also required to connect in parallel to these terminals.

61. Accordingly, a short circuit condition being introduced onto the DC power wiring that is used to operate burglar alarm audio glass break detectors and motion detectors, will instantly shut down the Defendants control unit.

62. Therefore, once any portion of the data-bus circuit equipment or wiring contains a short circuit condition, it will instantly shut down the control panels data-bus circuit and all of the interconnected data-bus connected equipment on the system, causing a catastrophic failure.

63. The list of equipment which is required to reside (in parallel) on the single data-bus violates UL Standards- UL-1023, UL-985 and NFPA 72.

64. In sum, the auxiliary DC power output circuit and/or its interconnected wiring and/or its DC powered devices that are installed throughout and within the household occupancy using the same (+) and (-) power terminals that the data-bus circuit utilizes significantly expands the control units danger and vulnerabilities to catastrophic failure, once a fire condition introduces a short circuit condition onto the data-bus wiring and/or onto any of the equipment that is required to connect to the single data-bus circuit.

65. Fundamentally, once the single data-bus circuit wiring leaves the control unit housing it exposes the entire alarm system to catastrophic and instantaneous failure based upon this data-bus circuit wiring and/or when any of the equipment that is required to be connected to the data bus is introduced to a short circuit condition by fire, in any location where the data-bus circuit wiring and/or its equipment is installed throughout the household occupancy.

66. Based on the required design characteristics of the Defendants' equipment, it creates foreseeably dangerous vulnerabilities to the overall functionality and reliability of the alarm systems control unit and to all occupants of the home who rely on the system to provide them with intrusion detection and early warning fire and life safety protection.

67. In March 2020, Jeffrey D. Zwirn of IDS Research and Development, Inc., a nationally recognized alarm and security expert with over 45 years of specialized education, skill, knowledge, training, experience and peer reviewed credentials in the alarm and security industry performed a demonstration of the Alarm System Defect of the Honeywell Vista alarm system. The demonstration is available at the following link: <https://www.youtube.com/watch?v=D4sWsXwpljE>. A copy of Mr. Zwirn's curriculum vitae is attached hereto as **Exhibit D**.

68. Moreover, on September 17, 2021, Jeffrey D. Zwirn of IDS Research and Development, Inc., a nationally recognized alarm and security expert with over 45 years of specialized education, skill, knowledge, training, experience and peer reviewed credentials in the alarm and security industry, emailed the National Fire Protection Association (NFPA) asking them to confirm that if "a fault in the burglar alarm system will affect the operation of the fire alarm system, and if equipment for other than the fire alarm system, being the burglar alarm system, that is connected to the common wiring of the system (the single data-bus) will interfere with the supervision of the fire alarm system and/or it will prevent alarm or trouble signal operation because once a short circuit condition is introduced onto the auxiliary power output of the system the zone expansion module(s) referenced above is no longer able to function since it instantly loses DC power...would you agree that the combination-listed control unit does not comply with NFPA 72 Standards."

69. On September 21, 2021, Christopher D. Coache, Senior Electrical Engineer of the NFPA responded stating, "[y]ou are correct that a failure in another system connected to the fire alarm system cannot affect the function of the fire alarm system. Also, the signals from another

system such as a burglar system cannot take priority over the life safety signals of the fire alarm system.” A copy of the email exchange is attached hereto as **Exhibit E**.

70. The Alarm System Defect described causes a combination listed burglar and fire alarm system control unit the exact situation that NFPA 72 standards and the Senior Electrical Engineer of the NFPA states cannot occur – a failure in the fire alarm system due to the failure in another part of the system is strictly prohibited.

71. In fact, the Alarm System Defect was analyzed and confirmed by Combustion Science & Engineering, Inc. (“CSE”), a company that for more than twenty years has been dedicated to the study, advancement, and application of combustion and fire sciences, conducted an independent evaluation of the Alarm System Defect.

72. CSE confirmed the Alarm System Defect of the Honeywell Vista alarm system - a combination listed single data-bus residential burglar and fire alarm system manufactured and sold by Defendants, and their noncompliance to the minimum standards required by both UL and NFPA 72. Indeed, in a July 5, 2022 report, CSE concluded:

In sum, CSE’s review of the codes and standards indicates that these documents clearly indicate that an electrical short circuit on non-fire equipment, including the data-bus and its wiring, shall not render a combination-listed fire/security system control unit non-functional. This code requirement applies for both household and commercial combination-listed systems and dates back to at least the early 2000s. UL’s implementation and interpretation of these sections of their standards and NFPA 72® have allowed this hypothesized and dangerous mode of failure to exist, despite their testing and ergo, combination-listed control units have become listed despite nonconformities. Failure of combination-listed control units to meet UL and NFPA standards violates the adopted fire code in each state of the United States and needlessly puts occupants inside an occupancy at an increased risk of serious personal injury and/or death during a life safety emergency.

...

As has been demonstrated in CSE's analysis and the experiments conducted, there is both scientific certainty and validity to Mr. Zwirn's hypothesized mode of failure for combination-listed single data-bus fire and burglar alarm control units, and they do not conform to UL and NFPA standards. Given that, from a Fire Protection Engineering perspective, this equipment is nonconforming, and it is dangerous to all persons who rely on it for mission critical functional and reliable life safety.

...

Regarding the household system (Vista 20P), CSE confirmed that a short circuit on any particular piece of equipment on the single data-bus's common wiring or fire or security equipment that is required to be connected to the data-bus wiring in parallel created a situation where the system instantly became non-functional. In this condition, the system has no ability for the siren(s) attached to the combination-listed control unit to audibly sound unless the system is armed and burglar devices are hardwired to control unit, where the siren still only sounds in a burglar (non-fire) tone. Additionally, none of the remote system keypads annunciated and the combination listed control unit had no ability to transmit alarm signal(s) to the central station. This violates NPFA 72® as well as UL 985 and UL 1023. Faults, such as electrical short circuits, shall not interfere with the operability of the fire functions of the system. Yet, in Mr. Zwirn's videos, and confirmed in CSE's testing, an electrical short circuit does exactly that.

See Stephen M. Olenick, Michael S. Klassen & Zachary Switzer, Analysis of the Hypothesized Data-Bus Failure Mode of Combination-Listed Fire/Security Control Units, at 24, 42, 44 (July 5, 2022), attached hereto as **Exhibit F**.

73. Plaintiff alleges that at all relevant times, specifically at the time he purchased the Alarm System, Defendants knew or were required to know that they had manufactured a non-conforming combination listed control unit with the Alarm System Defect that failed to meet the applicable and minimum UL and NFPA Standards. Defendants were under a duty to disclose the Alarm System Defects based upon its exclusive knowledge of and/or concealed material information regarding the Alarm System Defect from consumers like the Plaintiff. Defendants failed to disclose the Alarm System Defect to Plaintiff, other Class members, or the public at any

time or place or in any manner such that it could (and would) have affected Plaintiff's and other Class members' pre-sale decision to purchase the Alarm Systems.

CLASS ACTION ALLEGATIONS

74. Plaintiff brings this action on behalf of himself, and all other persons similarly situated, pursuant to Rules 23(b)(2) and 23(b)(3) of the Federal Rules of Civil Procedure on behalf of the following class and subclass (collectively, the "Classes"):

The Nationwide Class

All persons or entities in the United States who own, or have owned, an Alarm System.

The New Jersey Subclass

All persons or entities in New Jersey who own, or have owned, an Alarm System.

Excluded from all Classes

Excluded from the Classes are: (a) Defendants, any entity in which Defendants have a controlling interest, and their legal representatives, officers, directors, employees, assigns, and successors that purchased the Alarm Systems; (b) the judge to whom this case is assigned and any member of the judge's immediate family; and (c) individuals with claims for personal injury, wrongful death and/or emotional distress.

75. Numerosity/Impracticability of Joinder: The members of the Class are so numerous that joinder of all members would be impracticable. Based upon knowledge and belief approximately 15 million Class Alarm Systems were purchased by Class members.

76. Commonality and Predominance: There are common questions of law and fact that predominate over any questions affecting only individual members of the Class. These common legal and factual questions, include, but are not limited to, the following:

- a. Whether the Alarm Systems have a design defect.

- b. Whether the Defendants properly tested its combination listed control unit to UL-1023, UL-985 and NFPA 72 Standards before it submitted its product to Underwriters Laboratories, Inc. for listing.
- c. Whether the Defendants identified that its combination listed control unit was not conforming to UL and NFPA 72 Standards before being submitted to Underwriters Laboratories, Inc. for listing.
- d. Whether the Defendants received notice of its combination listed control unit failing to comply with UL and NFPA 72 Standards by any Nationally Recognized Testing Laboratory (NRTL) such as Underwriters Laboratories, Inc. but refused and/or failed to correct this control units non-conformities.
- e. Whether Defendants knew, or reasonably should have known, that the Alarm Systems were defectively designed, manufactured, marketed, distributed, advertised, warranted, sold, and serviced.
- f. Whether Defendants knew or reasonably should have known of the Defects before it sold the Alarm Systems to Plaintiffs and the other members of the Class.
- g. Whether Defendants actively and intentionally concealed, failed to disclose and/or omitted material information in its marketing, advertising, and sale of the Alarm Systems.
- h. Whether Plaintiff and the other members of the Class are entitled to equitable relief, including but not limited to a preliminary and/or permanent injunction.
- i. Whether Defendants violated New Jersey's Consumer Fraud Act, and the consumer protection laws of the states involving class members.
- j. Whether Defendants' conduct violates warranty laws, and other laws as asserted herein.
- k. Whether, as a result of Defendants' omissions and concealments of material facts related to the Alarm System Defects, Plaintiff and the other members of the Class have suffered ascertainable losses, and whether Plaintiff and the other members of the Class are entitled to monetary damages and/or other remedies, and if so the nature of any such relief; and/or
- l. Whether Defendants' acts and/or omissions entitle Plaintiff and the other members of the Class to treble damages, attorneys' fees, prejudgment interest and cost of suit.

77. Typicality: Plaintiff's claims are typical of the claims of the members of the Class. Plaintiff and the other members of the Class have suffered similar injury by the same wrongful practices by Defendants. The claims of Plaintiff and the other members of the Class all arise from the same wrongful practices and course of conduct and are based on the same legal and remedial theories.

78. Adequacy of Representation: Plaintiff will fully and adequately assert and protect the interests of the members of the Class and have retained class counsel who are experienced and qualified in prosecuting class actions. Neither Plaintiff nor his attorneys have any interests that are contrary to or conflicting with the members of the Class.

79. Superiority of Class Action and Impracticability of Individual Actions: A class action is superior to all other available methods for the fair and efficient adjudication of this lawsuit, because individual litigation of the claims of all members of the Class is not economically feasible and is procedurally impracticable. While the aggregate damages sustained by the members of the Class are in the millions of dollars, and are no less than five million dollars, upon information and belief, the individual damages incurred by each member of the Class resulting from Defendant's wrongful course of conduct are too small to warrant the expense of individual suits. It is estimated that the part necessary to effectuate each repair would cost only around \$100 and installation of the part would only require one service call for 15-20 minutes and around \$75. The likelihood of individual members of the Class prosecuting their own separate claims is remote, and, even if every Class member could afford individual litigation, the court system would be unduly burdened by individual litigation of such cases. Individual members of the Class do not have a significant interest in individually controlling the prosecution of separate actions, and individualized litigation would also present the potential for varying, inconsistent, or contradictory

judgments and would magnify the delay and expense to all of the parties and to the court system because of multiple trials of the same factual and legal issues. Plaintiff knows of no difficulty to be encountered in the management of this action that would preclude its maintenance as a class action. In addition, Defendants have acted or refused to act on grounds generally applicable to the members of the Class and, as such, final injunctive relief, or corresponding declaratory relief with regard to the members of the Class as a whole is appropriate.

CLAIMS FOR RELIEF

FIRST COUNT

(Violations of New Jersey's Consumer Fraud Act, N.J.S.A. § 56:8-2, et seq.)

80. Plaintiff on behalf of himself and all others similarly situated, incorporate by reference the allegations contained in the preceding paragraphs of this Complaint.

81. This claim is brought on behalf of the Nationwide Class and New Jersey Subclass.

82. Defendants have engaged in deceptive, unconscionable, unfair, fraudulent and/or misleading commercial practices in the advertising, promoting, marketing, distributing and selling of the Class Alarm Systems it knew to be defective.

83. Defendants intentionally omitted the fact that its goods, merchandise and/or services did not have characteristics, uses, benefits, or quantities that were advertised and promoted, and failed to disclose that its goods, merchandise and/or services were not of a particular standard, quality or grade.

84. Defendants had a duty to Plaintiff and the Nationwide Class and New Jersey Subclass to disclose the defective nature of the Class Alarm Systems and the Alarm System Defects because:

- a. Defendants were in a superior position to know the true state of facts about the Alarm System Defects and repair costs in the Alarm Systems.
- b. Plaintiff and the Nationwide Class and New Jersey Subclass could not reasonably have been expected to learn or discover that the Alarm Systems had dangerous safety defects until after manifestation of the Alarm System Defects; and
- c. Defendants knew that Plaintiff and the Nationwide Class and New Jersey Subclass could not reasonably have been expected to learn or discover the Alarm System Defects and the associated corrective action repair costs until the manifestation of the Alarm System Defects.

85. In failing to disclose the Alarm System Defects and the associated risks and repair costs, Defendants undertook active and ongoing steps to intentionally conceal the Alarm System Defects, and has concealed, failed to disclose and/or omitted material facts from Plaintiff and other members of the Nationwide Class and New Jersey Subclass with respect to the Alarm System Defects in the Alarm Systems.

86. Defendants intended that Plaintiff and the other members of the Nationwide Class and New Jersey Subclass would rely upon its acts of concealment and/or omission by purchasing the dangerous, defective and non-conforming Alarm Systems at full price rather than purchasing other alarm systems without the Alarm System Defects.

87. Defendants intended that Plaintiff and the other members of the Nationwide Class and New Jersey Subclass would rely upon its acts of concealment and/or omission to avoid replacing the defective parts during the warranty period.

88. Defendants' omissions were objectively deceptive and had the capacity to deceive reasonable consumers under the circumstances. The fact that Defendants knew about and failed to disclose that the Alarm System Defects in the Alarm Systems was a material fact that a reasonable and/or unsophisticated consumer would attach importance to at the time of purchase. This fact would influence a reasonable consumer's choice of action during the purchase of an alarm system.

89. Such practices contravene the New Jersey Consumer Fraud Act, N.J.S.A. 56:8-1, et seq.

90. As a direct and proximate result of Defendants' violations of the NJCFA, Plaintiff and the other members of the Nationwide Class and New Jersey Subclass have suffered ascertainable losses, which include but are not limited to, the amount they paid for the Alarm System or the cost to repair the Alarm System such that it operates in accordance with all applicable codes and regulations described in this Complaint. Further, based on the intentionally dishonest nature of Defendants' conduct, which was directed at the Class and Subclass, Defendants should also be held liable to the Class and Subclass for punitive damages in the form of treble damages and Attorneys' fees in accordance with the NJCFA.

SECOND COUNT

(Common Law Fraud)

91. Plaintiff, on behalf of himself and all others similarly situated, incorporates by reference the allegations contained in the preceding paragraphs of this Complaint.

92. The above-described conduct and actions constitute common law fraud by way of misrepresentations, concealment and omissions of material facts made by Defendants in inducing Plaintiff and the Class and Subclass to purchase Alarm Systems with the Alarm System Defects.

93. In failing to disclose the Alarm System Defects and the associated risks and repair costs, Defendants undertook active and ongoing steps to intentionally conceal the Alarm System Defects, and has concealed, failed to disclose and/or omitted material facts from Plaintiff and other members of the Nationwide Class and New Jersey Subclass with respect to the Alarm System Defects in the Alarm Systems.

94. Defendants sold Alarm Systems which they knew, or reasonably should have known, contained the Alarm System Defects and required repair or replacement.

95. Defendants made material misrepresentations by advertising that the Alarm Systems met UL and NFPA standards for household combination listed burglar and fire alarm system control units when in fact they did not. Indeed, the Defendants' Alarm System is/was manufactured in a such a way that if there is a fault or short circuit condition from fire attacking the data-bus circuit wiring and/or any of the equipment that is required to be connected to the control unit's single data-bus circuit of the control unit, it renders the control panel non-functional. If the data-bus circuit wiring is faulted and/or shorted anywhere it is installed throughout the home by fire, the control panel is instantly rendered non-functional and thus the fire alarm systems smoke detectors are rendered non-functional. Consequently, this renders them non-conforming to the minimum standards set by both the UL and NFPA 72 Standards, both of which Defendants represent their Alarm Systems comply with.

96. Defendants intended that the Plaintiffs and the other members of the Class and Subclass rely upon the above-described uniform misrepresentations, concealment and omissions.

97. Plaintiffs and other Class and Subclass Members justifiably relied upon Defendants' misrepresentations, concealment and omissions to their damage and detriment.

98. Plaintiffs and the Class and Subclass suffered the damages described in this complaint as a proximate result thereof.

THIRD COUNT

(Negligent Misrepresentation)

99. Plaintiff, on behalf of himself and all others similarly situated, incorporates by reference the allegations contained in the preceding paragraphs of this Complaint.

100. Defendants made material misrepresentations as described herein by advertising that the Alarm Systems met the UL and NFPA standards for household combination listed burglar and fire alarm systems when in fact they did not. Defendants knew, or should have known, that these statements were inaccurate.

101. Defendants intended their material misstatements to induce Plaintiff and the Class and Subclass to rely upon them, and Defendants expected Plaintiff and the Class and Subclass to rely upon them.

102. Plaintiff and the Class and Subclass reasonably relied on the misstatements when they purchased the Alarm Systems.

103. Plaintiffs and the Class and Subclass suffered the damages described in this complaint as a proximate result thereof.

FOURTH COUNT

(Breach of Express Warranty)

104. Plaintiff, on behalf of himself and all others similarly situated, incorporates by reference the allegations contained in the preceding paragraphs of this Complaint.

105. This claim is brought on behalf of the Nationwide Class and New Jersey Subclass.

106. By expressly representing that the Alarm Systems were UL listed and complied with NFPA 72, Defendants created an express warranty that the Alarm Systems would not contain the Alarm System Defect.

107. Defendants breached these warranties by selling Alarm Systems which they knew, or reasonably should have known, contained the Alarm System Defects and required repair or replacement.

108. Plaintiff notified Defendants of the breach within a reasonable time, and/or was not required to do so because affording Defendants a reasonable opportunity to cure its breach of written warranties would have been futile. Defendants also knew of the Alarm System Defects and yet chose to conceal it and to not comply with their warranty obligations.

109. As a direct and proximate result of Defendants' breach of the Alarm Systems' express warranties, Plaintiff and the other members of the Nationwide Class were damaged by, among other things, being forced to expend monies – and will continue to be forced to expend monies – to repair and/or replace their alarm systems and diminution in value of their alarm systems.

110. Plaintiff, and members of the Nationwide Class and New Jersey Subclass have complied with all obligations under the warranty, or otherwise have been excused from performance of said obligations as a result of Defendant's conduct described herein.

FIFTH COUNT

(Breach of Implied Warranty)

111. Plaintiff, on behalf of himself and all others similarly situated, incorporates by reference the allegations contained in the preceding paragraphs of this Complaint.

112. This claim is brought on behalf of the Nationwide Class and New Jersey Subclass.

113. Defendants were at all relevant times the manufacturer, distributor, warrantor, and/or seller of the Alarm Systems. Defendants knew, or reasonably should have known, of the specific use for which the Alarm Systems were purchased as represented in its "listing" of their combination control unit to the public, albeit it was false and untrue.

114. Defendants provided Plaintiff and the other members of the Nationwide Class and New Jersey Subclass with an implied warranty of merchantability that the Alarm Systems, and any components thereof, are merchantable and fit for the ordinary purposes for which they were sold.

115. Defendants impliedly warranted that the Alarm Systems were of merchantable quality and fit for such use. This implied warranty of merchantability included, among other things: (1) a warranty that the Alarm Systems, and the wiring and associated technology for operation were manufactured, supplied, distributed, and sold were safe, complied with the applicable and mandated codes and standards for household burglar and fire alarm control units and that they were reliable for providing fire alarm life safety protection, and would not experience failure from exposure to fire and (ii) a warranty that the Alarm Systems would be fit for their intended use.

116. Contrary to the applicable implied warranties of merchantability, the Alarm Systems were not fit for their ordinary and intended purpose of providing Plaintiff and the other members of the Nationwide Class and New Jersey Subclass with reliable fire alarm protection that would not experience failure from its exposure to fire.

117. Defendants breached the Alarm Systems' implied warranty of merchantability by selling Plaintiff and the other members of the Nationwide Class and New Jersey Subclass, fire alarm systems and/or components thereof, that are not fit for their ordinary/intended purpose of providing reliable life safety fire alarm protection that would not experience failure from exposure to fire because, inter alia, the Alarm Systems suffered from the Alarm System Defects at the time of sale.

SIXTH COUNT

**(Breach of Written Warranty Under the
Magnuson-Moss Warranty Act, 15 U.S.C. § 2301 *et seq.*)**

118. Plaintiff, on behalf of himself, and all others similarly situated, incorporates by reference the allegations contained in the preceding paragraphs of this Complaint.

119. This claim is brought on behalf of the Nationwide Class.

120. Plaintiff and other members of the Nationwide Class are “consumers” within the meaning of the Magnuson-Moss Warranty Act, 15 U.S.C. § 2301(3).

121. The Alarm Systems are “consumer products” within the meaning of 15 U.S.C. § 2301(1).

122. Defendant’s express warranty is a “written warranty” within the meaning of 15 U.S.C. § 2301(6).

123. Defendant breached their express warranty by distributing, and selling fire alarm systems which they knew, or reasonably should have known, contained the Alarm System Defects and required repair or replacement within the applicable warranty periods, and/or refused to honor the warranties by providing free repairs and/or replacements during the applicable warranty period or periods.

124. Defendants’ breach of the express warranty deprived the Plaintiff and the other members of the Nationwide Class the benefits of their bargains.

125. The amount in controversy of Plaintiff’s individual claims meets or exceeds the sum or value of \$25.00. In addition, the amount in controversy meets or exceeds the sum or value of \$50,000 (exclusive of interests and costs) computed on the basis of all claims to be determined in this suit.

126. Defendants have been afforded a reasonable opportunity to cure its breach of written warranty.

127. As a direct and proximate result of Defendants' breach of written warranty, Plaintiff and other members of the Class sustained damages and other losses in an amount to be determined at trial. Defendants' conduct damaged Plaintiff and other members of the Nationwide Class who are entitled to recover damages, consequential damages, specific performance, diminution in value, costs, attorneys' fees, rescission, and/or other relief as appropriate.

SEVENTH COUNT

(Unjust Enrichment)

128. Plaintiff and proposed class members incorporate by reference all allegations in the above preceding paragraphs as if set forth fully in this count.

129. This claim is brought on behalf of the Nationwide Class and New Jersey Subclass.

130. The Alarm Systems were defective in that they do not provide reliable fire alarm life safety protection when exposed to fire as they are required to provide pursuant to UL and NFPA Standards.

131. The Defendants benefited financially from its breaches of warranty, misrepresentations and fraud as described in this complaint. The Defendants denied legitimate warranty claims and obtained further unwarranted financial gain.

132. Plaintiff and the Class members sustained monetary damages as described in this complaint.

133. Allowing the Defendants to retain its monetary enrichment from its wrongful and unlawful acts would be unjust and inequitable.

134. Plaintiff and the Class and Subclass members request that the Defendants disgorge its profits from its wrongful and unlawful conduct and that the Court establish a constructive trust

funded by the benefits conferred upon the defendant as a result of its wrongful conduct. Plaintiff and the Class members should be designated beneficiaries of the trust and obtain restitution for out-of-pocket expenses caused by the defendant's conduct.

EIGHTH COUNT

(Violations of the Truth-in-Consumer Contract, Warranty and Notice Act)

135. Plaintiff and proposed class members incorporate by reference all allegations in the above preceding paragraphs as if set forth fully in this count.

136. This claim is brought on behalf of the New Jersey Subclass.

137. Plaintiff and those similarly situated are "consumers" within the meaning of TCCWNA, as set forth at N.J.S.A. 56:12-15.

138. Defendants are sellers within the meaning of TCCWNA, as set forth at N.J.S.A. 56:12-15 and -17.

139. TCCWNA, at N.J.S.A. 56:12-15, provides in relevant part that "no seller, creditor, lender or bailee may offer or enter into any written consumer contract or give or display any notice which includes any provision that violates a clearly established right of the consumer or responsibility of the seller, lessor, creditor, lender or bailee as established by State or Federal law at the time the offer is made or the consumer contract is signed or the warranty, notice or sign is given or displayed."

140. By violating the CFA, and a clearly established legal right of a consumer and/or responsibility of the seller to not engage in any misrepresentations, deception, or unconscionable commercial conduct in connection with consumer sales as detailed in this Complaint, Defendants thereby violated the Truth-in-Consumer Contract, Warranty and Notice Act, N.J.S.A. 56:12-14 *et seq.*

141. As the result of Defendants' violations of TCCWNA, Plaintiffs and the Class Members are entitled to statutory damages of not less than \$100 each as provided by N.J.S.A. 56:12-17.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff on behalf of himself and on behalf of the Nationwide Class, and New Jersey Subclass, prays for judgment against Defendants granting the following relief:

1. Certification of the proposed Nationwide Class, and New Jersey Subclass and appointing Plaintiff to represent the Classes and Plaintiff's counsel as class counsel;
2. All recoverable compensatory, statutory, punitive and other damages sustained by Plaintiffs and the other members of the Nationwide Class, and New Jersey Subclass;
3. Restitution and disgorgement of all amounts obtained by Defendant as a result of its misconduct, together with interest thereon;
4. Actual, treble, and/or statutory damages for injuries suffered by Plaintiff and the other members of the Nationwide Class, and New Jersey Subclass in the maximum amount permitted by applicable law;
5. Statutory pre-judgment and post-judgment interest on the Class damages;
6. Injunctive and declaratory relief;
7. Payment of reasonable attorneys' fees and costs as may be allowable under applicable law; and
8. Such other relief as the Court may deem just and proper.

DEMAND FOR JURY TRIAL

Plaintiff hereby demands a trial by jury on all causes of action so triable.

LOCAL CIVIL RULE 11.2 CERTIFICATION

The undersigned hereby certifies that the matter in controversy is not the subject of any other action pending in any court, or of any pending arbitration or administrative proceeding.

DATED: September 16, 2022
Ocean, New Jersey

POULOS LOPICCOLO, PC

By: /s/ *Joseph LoPiccolo*
Joseph LoPiccolo
John N. Poulos
Anthony S. Almeida
1305 South Roller Rd.
Ocean, New Jersey 07712
732-757-0165
lopiccolo@pllawfirm.com
poulos@pllawfirm.com
almeida@pllawfirm.com

EXHIBIT A

resideo



**ADEMCO VISTA SERIES
VISTA-20P / VISTA-20PSIA
VISTA-15P / VISTA-15PSIA
Security Systems**

Installation and Setup Guide

RECOMMENDATIONS FOR PROPER PROTECTION

The Following Recommendations for the Location of Fire and Burglary Detection Devices Help Provide Proper Coverage for the Protected Premises.

Recommendations For Smoke And Heat Detectors

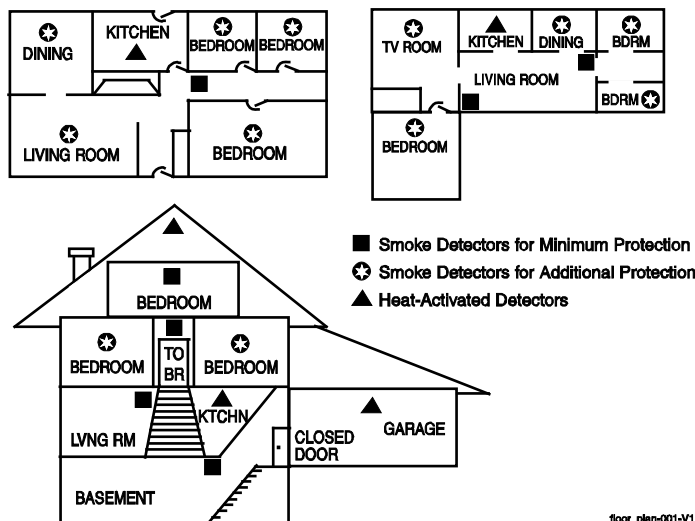
With regard to the number and placement of smoke/heat detectors, we subscribe to the recommendations contained in the National Fire Protection Association's (NFPA) Standard #72 noted below.

Early warning fire detection is best achieved by the installation of fire detection equipment in all rooms and areas of the household as follows: For minimum protection a smoke detector should be installed outside of each separate sleeping area, and on each additional floor of a multi-floor family living unit, including basements. *The installation of smoke detectors in kitchens, attics (finished or unfinished), or in garages is not normally recommended.*

For additional protection the NFPA recommends that you install heat or smoke detectors in the living room, dining room, bedroom(s), kitchen, hallway(s), attic, furnace room, utility and storage rooms, basements and attached garages.

In addition, we recommend the following:

- Install a smoke detector inside every bedroom where a smoker sleeps.
- Install a smoke detector inside every bedroom where someone sleeps with the door partly or completely closed. Smoke could be blocked by the closed door. Also, an alarm in the hallway outside may not wake up the sleeper if the door is closed.
- Install a smoke detector inside bedrooms where electrical appliances (such as portable heaters, air conditioners or humidifiers) are used.
- Install a smoke detector at both ends of a hallway if the hallway is more than 40 feet (12 meters) long.
- Install smoke detectors in any room where an alarm control is located, or in any room where alarm control connections to an AC source or phone lines are made. If detectors are not so located, a fire within the room could prevent the control from reporting a fire or an intrusion.



THIS CONTROL COMPLIES WITH NFPA REQUIREMENTS FOR TEMPORAL PULSE SOUNDING OF FIRE NOTIFICATION APPLIANCES.

Recommendations For Proper Intrusion Protection

For proper intrusion coverage, sensors should be located at every possible point of entry to a home or commercial premises. This would include any skylights that may be present, and the upper windows in a multi-level building.

In addition, we recommend that radio backup be used in a security system so that alarm signals can still be sent to the alarm monitoring station in the event that the telephone lines are out of order (alarm signals are normally sent over the phone lines, if connected to an alarm monitoring station).

NOTE: Copies of the Programming, Installation, and User Guides must be left with the end user.



The product should not be disposed of with other household waste. Check for the nearest authorized collection centers or authorized recyclers. The correct disposal of end-of-life equipment will help prevent potential negative consequences for the environment and human health.

Any attempt to reverse-engineer this device by decoding proprietary protocols, de-compiling firmware, or any similar actions is strictly prohibited.

For Support visit: www.resideo.com.

For Warranty information visit: www.resideo.com.



resideo

www.resideo.com

2 Corporate Center Drive, Suite 100
P.O. Box 9040, Melville, NY 11747

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K5305-1V10C 3/15 Rev. C



VISTA-20P

VISTA® Control Panel

The Honeywell Home VISTA family of products by Resideo is among the most widely recognized and reliable brands in the industry with the largest security system install base in the world.

The versatile VISTA-20P offers options to send alarm signals, upload/download capability, and remote services via IP or LTE communications, improving the speed at which information can be delivered to and from the control panel. This maximizes system longevity and reduces service calls and future upgrade costs. The VISTA-20P has the broadest array of residential hardwired or wireless sensor zone options that protect life and property, creates awareness and convenience with environmental options like thermostat, water shut-off and



lighting control, as well as advanced functions like audio control via Denon. VISTA also offers fixed-English, custom Alpha or touchscreen keypad displays, two-wire smoke detectors, connected home support through Tuxedo Touch® with the ability to customize system actions, and events using scene control.

FEATURES AND BENEFITS

- IP and cellular radio alarm reporting and upload/download capability
- Z-Wave® thermostats, lights, locks, water shut-off, garage door, shades and audio control via Tuxedo Touch and VAM
- Supports four graphic touchscreen keypads
- Wireless keys can be programmed without using zones
- Eight on-board hardwired zones standard (15 when Zone Doubling feature is used)
 - 40 hardwire expansion zones
 - 40 wireless expansion zones
- Two low current on-board trigger outputs
- 100 Event Log viewable at system keypads with time/date stamp
- 48 system user codes assignable to either partition
- Expandable to 48 total zones when used with hardwired and/or wireless expansion modules
- Two independent partitions plus a common partition
 - Global Arming from any system keypad
 - Go to function to view or operate one partition from the other
 - Separate partition account numbers
- 16 output devices
 - Relays (Model 4204 Relay Modules, or 4229 Expansion Module)
- Four installer-configurable zone types allows the installer to create custom zone types by assigning all zone attributes
- Supports four-wire and up to 16 two-wire smokes
 - Works with Sentrol CleanMe™ maintenance signal
- Multiple actions on output devices depending on system state
 - Turns lights off when system arms
 - Turns the same light on when system disarms
 - Flashes same lights when system is in alarm
- Built-in phone line cut monitor with programmable delay and annunciation options
 - Display on system keypads
 - Trigger local sounders
 - Trigger system bell

SECURITY DEALER FEATURES

- Automatic System Load Shed
 - During extended AC power fail, the system battery will be disconnected to prevent irreversible battery failure. Reduces service calls to replace batteries.
- Dynamic Signaling
 - Reduces redundant reporting to the central station when multiple reporting methods are used; i.e. digital dialer and AlarmNet® radio

VALUABLE END-USER FEATURES

- Viewable on system keypads:
 - Exit countdown
 - Time and date display*
 - Event log*
- Auto keypad backlighting on entry
- Keyswitch arming
- Programmable macro buttons and single-button arming
- Supports a variety of wireless remote controls for single-button operation
- User Scheduling
 - Latchkey reports to pagers
 - Auto arm/disarm
 - "User access" time windows
- VIP Module allows system control from any touchtone phone
- Chime by zone
- Fully compatible with Resideo Total Connect® Remote Services

*Requires custom alpha keypad

VISTA-20P Technical Specifications

ELECTRICAL

- Aux. power 12 VDC, 600mA maximum
- Seven hour standby at 400mA aux. load with four amp hour battery
- 16.5 VAC/25 VA transformer
- Alarm output 12 VDC, 2.0 amps max.
 - For UL installations, combined aux. and alarm output cannot exceed 700mA

OUTPUT CONTROL

- Supports up to four relay boards (up to 16 relays)
- Optional X-10 transformer/interface (part no. 4300) may be used to control up to 16 X-10 receiving devices

ZONES

- Eight hardwired zones (15 with zone doubling)
- Selectable response 10msec, 350msec, 750msec
- Assignable to any partition
- 20 selectable zone types plus four configurable zone types
- Programmable swinger suppression

EXPANSION DEVICES

- 4219 – Eight hardwired zones – 16mA
- 4204 – Up to four relays – 15mA standby (each active relay draws an additional 40mA)
- 4229 – Eight hardwired zones and two relays – 36mA (each active relay draws an additional 40mA)

WIRELESS RECEIVERS

- 5881ENL RF Receiver supports up to eight zones – 60mA
- 5881ENM supports up to 16 zones – 60mA
- 5881ENH supports up to 48 zones – 60mA
- 5883H Transceiver supports up to 40 zones – 80mA

HONEYWELL HOME KEYPADS

- 6160 Custom Alpha Security Keypad – 40mA/120mA
- 6160V Voice Custom Alpha Security Keypad – 60mA/190mA
- 6160RF Custom Alpha Receiver/Security Keypad – 120mA/210mA

- 6150 Fixed-English Security Keypad – 40mA/70mA
- 6150V Voice Fixed-English Security Keypad – 60mA/190mA
- 6150RF/6150RFFR Fixed-English/French Receiver/Security Keypad – 80mA/105mA
- 6151ZN/6151ZNFR Fixed-English/French Security Keypad with Hardwired Zone – 35mA/80mA
- 6148 Fixed English LCD – 30mA/55mA
- 6290W Color Graphic Touchscreen Keypad with Voice
- TUXEDOW Security and Smart Controller

RESIDED KEYPADS

- 6160C Custom Alpha Security Keypad – 40mA/120mA
- 6160VC Voice Custom Alpha Security Keypad – 60mA/190mA
- 6160RFC Custom Alpha Receiver/Security Keypad – 120mA/210mA
- 6150C Fixed-English Security Keypad – 40mA/70mA
- 6150RFC/6150RFFRC Fixed-English/French Receiver/Security Keypad – 80mA/105mA
- 6290WC Color Graphic Touchscreen Keypad with Voice
- TUXEDOWC Security and Smart Controller

AGENCY LISTINGS

cETLus Listed to:

- Household Fire Warning System Units – ANSI/UL 985
- Safety for Digital Alarm Communicator System Units – ANSI/UL 1635
- Standard for Safety Household Burglar Alarm System Units – UL 1023
- Safety for Police Station Connected Burglar Alarm Units and Systems – ANSI/UL 365
- Safety Local Burglar Alarm Units and Systems – UL 609
- Safety Central-Station Burglar Alarm Units – ANSI/UL 1610
- Residential Fire Warning System Control Units – ULC-S545

- Canadian Standard for Household Burglar Alarm System Units – ULC Subject C1023
- Standard for Local Burglar Alarm Units and Systems – ULC-S303
- Standard for Central and Monitoring Station Burglar Alarm Units – ULC-S304
- Control Panel Standard – Features for False Alarm Reduction – ANSI/SIA CP-01-2010

cULus Listed to:

- UL 985 – Household Fire Warning System Units
- UL 1023 – Household Burglar Alarm System Units
- UL 609 – Local Burglar Alarm Units and Systems
- UL 365 – Police Station Connected Burglar Alarm Units and Systems
- UL 1610 – Central Station Burglar Alarm Units
- UL 1635 – Digital Alarm Communicator System Units
- UL 1037 – Anti-theft Alarms and Devices

CNL indicates investigations to the following Canadian Standards:

- CAN/ULC-S303-M91 – Standard for Local Burglar Alarm Units and System.
- ULC/ORD-C1023-74 – Preliminary Standard for Household Burglar Alarm System Units
- CAN/ULC-S545-M89 – Standard for Residential Fire Warning System Control Units
- ANSI/SIA CP-01-2010 Control Unit Standard-Features for False Alarm Reduction

VISTA-20P Technical Specifications cont.

COMMUNICATIONS

- LTEM-PA Advanced Modular Communicator (AT&T)
- LTEM-PV Advanced Modular Communicator (Verizon)
- LTEM-XV LTE Cat M1 Communicator (Verizon)
- LTEM-XA LTE Cat M1 Communicator (AT&T)
- LTEM-XC LTE Cat M1 Communicator (Bell)
- LTE-IA LTE and Internet Multi-Path Communicator (AT&T)
- LTE-IV LTE and Internet Multi-Path Communicator (Verizon)
- LTE-IC LTE and Internet Multi-Path Communicator (Bell)
- 7847i-E Enterprise Internet Communicator
- 7847i Internet Communicator

ORDERING

VISTA-20P	Control Panel
VISTA-20PSIA	Control Panel for CP-01 SIA Certifications
VISTA-20PCN	Control Panel (CANADA)

For more information

resideo.com/pro



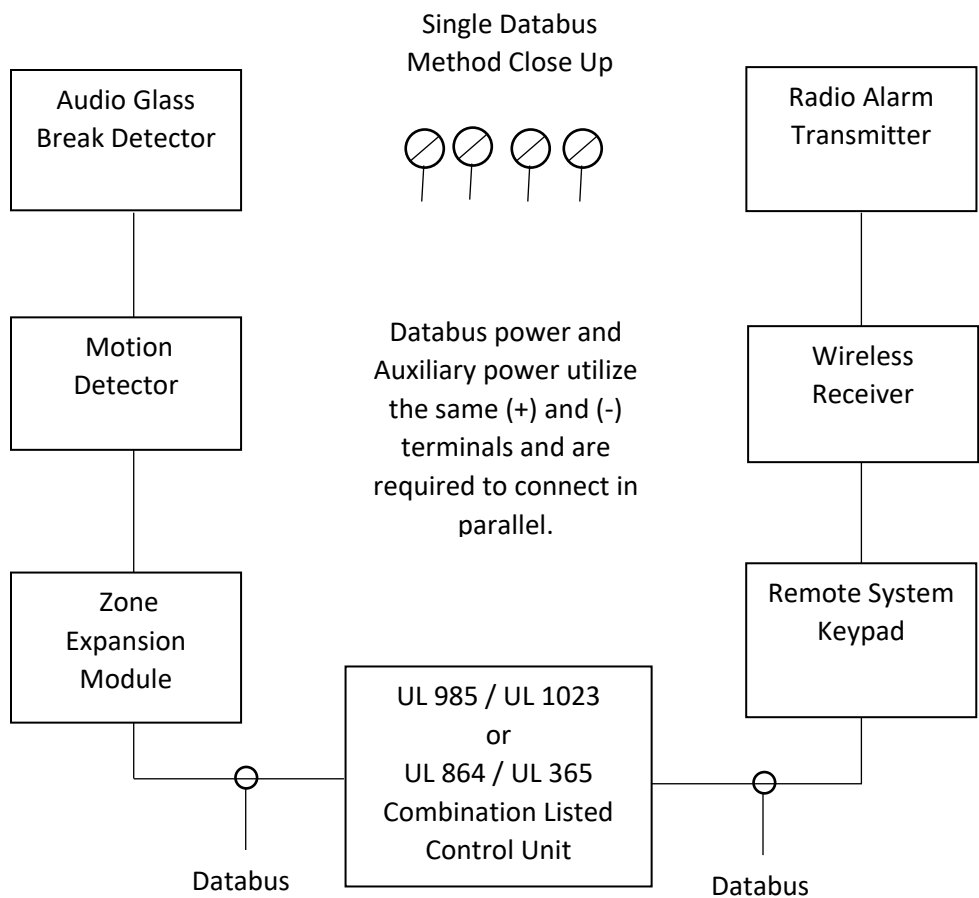
For more information
resideo.com

Resideo Technologies, Inc.

2 Corporate Center Drive,
Suite 100
P.O. Box 9040
Melville, NY 11747
1-800-645-7492

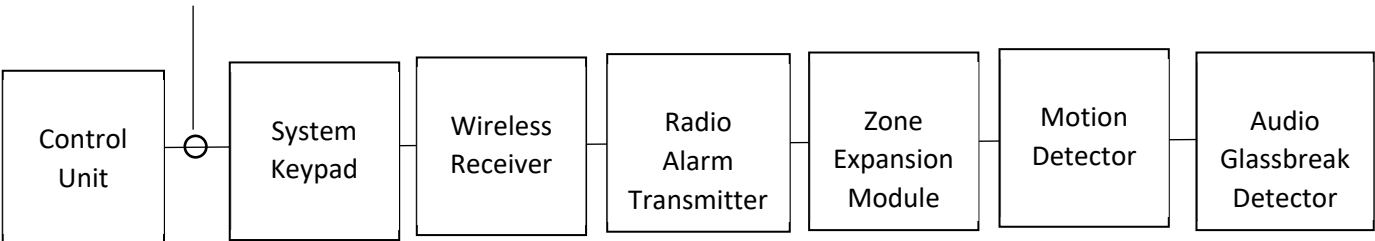
L/VISTA20PD/D | 08/21
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EXHIBIT B



All Databus connected devices are required to be connected in parallel with each other and throughout the protected premises.

Single Databus Method requires parallel connection



A short circuit condition being introduced anywhere onto the Databus will cause the Combination Listed Control Unit to instantly fail.

EXHIBIT C

UL Standards Matrix
UL® 985-Household Fire Warning System Units, 5th Edition and
The 6th Edition Effective May 15th, 2019

Standard References	5th Edition May 26, 2000	6th Edition May 15, 2015
Combination Control Unit	Not included in this edition of the standard	41.3
Short circuit or open circuit single faults in the non-fire equipment or in the wiring between the non-fire equipment and the fire alarm system shall* not impede or impair the monitoring for integrity of the fire alarm system, nor impede or impair any fire alarm signal transmissions or operations.	Not included in this edition of the standard	41.3.1.3
The required operation of the fire alarm equipment shall* not be impaired by any failure of the non-fire alarm equipment hardware, software or circuits, or by any maintenance procedure, including removal or replacement of defective equipment or powering down of the non-fire equipment.	Not included in this edition of the standard	41.3.1.6
Electrical Supervision Test	41	Not Included in this edition of the standard.
An open or ground fault in any circuit extending from a household control unit, other than the initiating device circuit, shall* not affect the operation of the control unit except for the loss of the function extending from that circuit.	41.4	Not Included in this edition of the standard.
A fault condition, open ground, or short of other than a fire alarm circuit of a combination control unit shall* not affect the fire-alarm signaling.	41.6	Not Included in this edition of the standard.
Keypads	Not included in this edition of the standard	44.4
Keypads and other operator interfaces shall* be monitored for integrity so that within 200 seconds a distinctive audible trouble signal will indicate the occurrence of a single break (open) or single ground fault in the interconnections, which would prevent the intended operation of the system for alarms, alarm transmissions to a supervising station, or the signal representative of a failure to complete a signal transmission with a supervising station. The trouble annunciation shall* be at an operator interface or audible at the operator interface. Prior to the application of a fault the control unit shall* be energized in the intended standby condition while connected to a rated source of voltage and frequency. Exception: Supervision is not required for keypad interconnections to the control unit extending not more than 3 feet (0.91 m) from the control unit.	Not included in this edition of the standard	44.4.1
Annunciation of the audible trouble signal required by 44.4.1 is permitted to be remote from an operator interface, when the product's installation instructions alert the user that the product sounding the audible is to be installed in a location where the audible signal can be heard at the operator interface.	Not included in this edition of the standard	44.4.2

*The word "shall" indicates a mandatory requirement.

NFPA 72 Code Matrix
NFPA 72® -National Fire Alarm Code
NFPA 72®-National Fire Alarm And Signaling Code

Code References	2019 Edition	2016 Edition	2013 Edition	2010 Edition	2007 Edition	2002 Edition
Faults in other systems or components shall* not affect the operation of the fire alarm system	29.10.7.5	29.7.7.4	29.7.7.4	29.7.6.4	11.7.6.4	11.7.6.4
Where common wiring is employed for a combination system, the equipment for other than the fire alarm system shall* be connected to the common wiring of the system so that short circuits, open circuits, grounds, or any fault in this equipment or interconnection between this equipment and the fire alarm system wiring does not interfere with the supervision of the fire alarm system or prevent alarm or trouble signal operation.	29.10.7.6	29.7.7.5	29.7.7.5	29.7.6.5	11.7.6.5	11.7.6.5
Equipment not required for the operation of the fire alarm system that is modified, removed, or malfunctioning in any way must not impair the operation of the fire alarm system. Commentary Text from NFPA 72® Handbook	29.10.7.6	29.7.7.5	29.7.7.5	29.7.6.5	11.7.6.5	11.7.6.5

UL Standards Matrix
UL® 1023- Household Burglar-Alarm System Units

Standard References	6th edition November 25, 1996	7th edition September 1, 2017
Electrical Supervision Test	27	30
An open or ground fault in any circuit extending from a household system unit, other than the initiating device circuit, shall* not affect the operation of the product except for the loss of the function extending from that circuit. Exception: If such a fault will affect the operation of the product, a trouble signal or alarm condition or test feature that will indicate the fault is required.	27.2	30.2
A fault condition, open ground, or short of other than a burglar-alarm circuit of a combination control unit, shall* not affect the burglar-alarm signal.	27.3	30.3

*The word “shall” indicates a mandatory requirement.

EXHIBIT D

IDS Research & Development, Inc.*Security And Alarm Expert Witness And Consultation Services*

Jeffrey D. Zwirn, CPP, CFPS, CFE, SET, FASI&T, CHPA- IV, NFPA 3000(PS), President

Board Certified in Security Management

Nationwide: 800-353-0733

www.alarmexpert.com

Services Provided Nationwide**PROFESSIONAL SUMMARY:**

Recognized Subject Matter Expert (SME) by the National Burglar and Fire Alarm Association (NBFAA), the Electronic Security Association (ESA), the National Fire Protection Association (NFPA), the Central Station Alarm Association (CSAA), the Monitoring Association (TMA), the Security Industry Association (SIA), the professional and technical communities of the alarm and security industry, law enforcement, and colleges and universities. Master Alarm Technician, Florida, Delaware, New Jersey And New York State Burglar And Fire Alarm Certified Contractor, Florida State Registered Electrical Contractor, Certified Burglar And Fire Alarm Specialty Electrician, Security Alarm Dealer, District Of Columbia-Department Of Consumer And Regulatory Affairs- Security Alarm Agent, Certified Protection Professional (CPP)-Board Certified In Security Management, American Society For Industrial Security, Certified Fire Protection Specialist (CFPS) National Fire Protection Association International (NFPA), Level IV NICET¹ Certified Senior Engineering Technician, Fire Protection Engineering Technology/Fire Alarm Systems, National Institute For Certification In Engineering Technologies- A Division Of The National Society Of Professional Engineers, Certificate Number 111275, Level I and II NICET Certified Technician, Inspection and Testing of Fire Alarm Systems, National Institute For Certification In Engineering Technologies-A Division Of The National Society Of Professional Engineers, A Level IV Certified Homeland Security Protection Associate (CHPA-IV) Through The National Sheriffs' Association In Conjunction With The Global Society of Homeland And National Security Professionals, and A NFPA 3000 (PS) Active Shooter/Hostile Event Response: Plan, Respond, Recover Specialist² Through The National Fire Protection Association International (NFPA). With Over Forty Years Of Expertise And Experience In Security, Access Control, Personal Emergency Response Systems (PERS), Medical Alarm Systems, Audio Microphone Technology in Security Applications, Video Surveillance Systems, Security Officer Duties Under Title 13 of the New Jersey Administrative Code, The Security Officer Registration Act (SORA), Low and High Temperature Monitoring Systems, Mechanical and Electronic Locking Systems, Fire Alarm And Life Safety System Design, Development, Installation, Sales, Maintenance, Operational Management, Project Management, And UL Listed Central Station Monitoring Of All Types And Brands Of Burglar And Fire Alarm Systems And Equipment. Appointed NFPA 72®, The National Fire Alarm Code®, Principal Technical Committee Member, Special Expert Category³, Appointed NFPA 72®, The National Fire Alarm And Signaling Code, Principal Technical Committee Member, Special Expert Category,^{4,5} UL

¹ Eleven (11) extra work elements were also successfully passed over NICET's core requirements.

² This training program was based on the new NFPA 3000™ (PS), *Standard For An Active Shooter/Hostile Event Response (ASHER) Program*, NFPA Responded To The Urgent Need For This Document By Establishing A Committee Of Experts From The Following Agencies And Associations To Develop The Standards: U.S. Department of Justice, Federal Bureau of Investigation, U.S. Department of Homeland Security, International Association Of Chiefs of Police, International Association of Fire Chiefs, National Volunteer Fire Council, Fraternal Order of Police, International Association of Fire Fighters, Emergency Medical Services Labor Alliance, National Association of Emergency Medical Technicians, National EMS Academy, International Association of EMS Chiefs, American College of Emergency Physicians, National Association of EMS Physicians, and the International Association of Emergency Managers.

³ "Committee Membership Classifications. The following classifications apply to Technical Committee members and represent their principal interest in the activity of a committee. *SE, Special Expert*: A person not representing any of the previous classifications, but who has special expertise in the scope of the standard or portion thereof."

⁴ Technical Committee Member from July of 2002 through November 2009.

⁵ NFPA is proud of its long history and ongoing work to eliminate loss from fire, electrical and other hazards. We are also extremely proud to say we don't accomplish any of this alone. We are joined by all of you - the thousands of volunteers around the globe who give your time, voice and expertise to our standards development process. Together, we are NFPA and we are saving lives and property. On behalf of NFPA and the millions of people that rely on us every day, thank you for your role in developing critical codes and standards used by governments, private industry and many others around the world. Every few years we provide a small token of our appreciation for your involvement as a member of our technical committees. While I'm sure you are appreciative of the gesture, this year we wanted to do something in line with our mission that will have a lasting

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Nationwide: 800-353-0733

www.alarmexpert.com

Technical Committee Member And Expert Consultant To FM Global And Monthly Technical Contributor And Writer In Security Science For The Nationally Recognized Security Sales And Integration Magazine. Sixty Seven (67) Accepted Submissions To NFPA 730, Report Of The Committee On Premises Security And Provides Physical Security Evaluations, Recommendations And Countermeasures. Experienced As A Consultant And Expert Testimonial Witness In Alarm And Premise Liability And Security Related Matters For Insurance Companies, Law Firms, Government And Law Enforcement Agencies, Public And Private Institutions And Nationally Recognized Alarm And Central Station Companies. Over 20,000 Hours Of Technical Training At Local, State, And National Seminars, Manufacturer And Association Training, Conferences, Meetings, Symposiums, And Conventions. Instructor To The Technical Community Of The Alarm, Security, And Law Enforcement Industries. College And University Instructor For Undergraduate And Graduate Students Of Institutions Of Higher Education In Alarm Science, Advanced Electronic And Physical Security Countermeasures, Security Surveys, Needs Analysis, Security Systems, Physical Security, And Fire Alarm And Life Safety Systems And Methodologies. Recognized As A Subject Matter Expert (SME) By The Electronic Security Association (ESA). Security And Alarm System Test Questions Submitted To And Accepted By The American Society For Industrial Security For The Coveted And Internationally Recognized Certified Protection Professional Certification Examination And As A Task Group Member And Subject Matter Expert, Has Written Examination Questions For The Nationally Recognized Fire Alarm System Certification Program For Levels I, II, III And IV In Fire Protection Engineering Technology/Fire Alarm Systems, Administered Through The National Institute For Certification In Engineering Technologies (NICET). Provided Expert Assistance In Valuation Of Alarm Companies, Central Stations, Mergers, Acquisitions And Due Diligence For All Types Of Alarm And Security System Accounts. Mr. Zwirn Has Also Developed Training Curriculum And Written Alarm And Security Test Examinations For The New York City Police Department And The Joint Terrorism Task Force And Is Recognized As A 22 Year Active Designated Expert Instructor To The New York City Police Department, The Leader In Law Enforcement, Crime Prevention Section In Its Basic Methods Of Security Course.

I Am Committed To Continually Augmenting My Education, Skill, Knowledge, Training, And Experience In The Alarm And Security Industry. As Part Of This Continuing Educational Process, I Am An Active And Participating Member Of The Following Locally, Nationally, And Internationally Recognized Organizations: Electronic Security Association, American Society For Industrial Security, Association Of Certified Fraud Examiners, International Association Of Electrical Inspectors, National Fire Protection Association (NFPA), New Jersey Electronic Security Association, Security Industry Association, Automatic Fire Alarm Association, National Institute For Certification In Engineering Technologies (NICET), The Monitoring Association⁶, The American Society Of Certified

impact on the very individuals changed by fire. NFPA works diligently to create standards, education, research and resources to eliminate death, injury, property and economic loss from fire, electrical and other hazards. Even with the good work we do, unfortunately accidents do happen. Each year more than 40,000 people in the United States and thousands more around the world will be hospitalized with a severe burn injury. Life after a burn injury comes with a hard reality – that survival is only the beginning. True recovery is a lifelong journey that requires care and compassion for the body, mind, and spirit. NFPA is honored to join with Phoenix Society for Burn Survivors, the leader of a worldwide community of burn survivors, their loved ones, health professionals, and firefighters, as they embark on a journey of unprecedented growth of their programs, advocacy, and impact. Our support on behalf of our volunteers will help expand the services, allowing the Phoenix Society to reach more people whose lives have been altered by a burn injury in more places than ever before. It will allow them to make sure that no one is ever alone on their recovery journey! Nothing heals people like other people. The Phoenix Society has become a strong advocacy partner for NFPA. Together, we are educating, advocating and raising awareness so burn injuries can be minimized and striving to see that all those who are burned have the hope and support needed to not just survive but thrive again. Thank you for the work you do on our technical committees and thank you for being the foundation of our gift to the Phoenix Society. For more information on the campaign we are supporting visit <https://www.phoenix-society.org/ways-to-give/nfpa-honor-gift>. The Phoenix Society will also be in the expo at the Conference in Expo in Las Vegas this year. Sincerely, Jim Pauley, President and CEO, NFPA.

⁶ Formerly the Central Station Alarm Association.

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Board Certified in Security Management

Nationwide: 800-353-0733

www.alarmexpert.com

Engineering Technicians (ASCET), Board Of Professional Certification (BOPC), And Underwriters Laboratories, Inc. (UL).

UNITED STATES PATENTS:

Awarded Three United States Patents On Electronic Security Inventions.⁷

- Supervising Alarm Notification Devices Patent Number 9437100 Issued To Jeffrey D. Zwirn, Tenaflly, NJ, 2016.
- Electronic Deterrence Devices Patent Number 9542818B2 Issued to Jeffrey D. Zwirn, Tenaflly, NJ, 2017.
- Protective Device For Alarm Systems Patent Number 9,965,944 B1 Issued to Jeffrey D. Zwirn, Tenaflly, NJ, 2018.
- Active Shooter Module And Method- *Patent Pending.*
- APS Protector And Method-*Patent Pending.*

EXPERIENCE:

1969-1993

Florida

Intruder Detection Systems, Inc. (Incorporated 1979)

Founder, President & Chief Executive Officer

Established And Grew Successful Organization From Innovative Concept To One Of The Largest Independent Alarm Companies In The State Of Florida. Developed, Designed, Serviced, Maintained, Installed And Monitored Thousands Of Access Control, Fire Alarm And Security Systems For Commercial, Industrial And Residential Clients. Increased Billings Through Referrals, Repeat Business And Customer Service Excellence. Qualified⁸ And Maintained A UL Listed Alarm Company Providing UL Certificated And Listed Alarm Systems Grade A2, AA2, A3 And AA3. Budgeting And Financial Planning, Evaluation, Purchasing And Inventory Management; Sales And Marketing Of Increasingly Sophisticated Integrated Fire And Burglary Protection Systems And Devices.

1980-Present

New Jersey

IDS Research & Development, Inc. (Incorporated 1985)

Expert Witness And Consultation Services, Multi State Court Qualified Alarm

And Security Expert

Nationwide

Created And Developed A Separate Division Of Alarm Installing Company For Expert Witness And Consultation Services On A Wide Range Of Alarm And Security Related Matters For Many Agencies And Professional Organizations In Both The Public And Private Sectors. To Date, Expert Witness And/Or Consultation Services Provided In Hundreds Of Alarm And Security Related Cases And Claims For Plaintiffs, Defendants And For A Diverse Clientele Including Numerous Insurance Companies; Nationally Recognized Alarm And Central Station Companies; FM Global, Fortune 500 Companies; The City Of North Miami Police Department; NYPD Police

⁷ Zwirn Corporation.

⁸ UL Listed June 1984.

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Jeffrey D. Zwirn, CPP, CFPS, CFE, SET, FASI&T, CHPA- IV, NFPA 3000(PS), President

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Nationwide: 800-353-0733

www.alarmexpert.com

Training Academy And Crime Prevention Unit; American Society For Industrial Society⁹ (ASIS); Bureau Of Alcohol, Tobacco, Firearms And Explosives (ATF); US Drug Enforcement Administration (DEA); The United States Coast Guard And The Department Of Corrections, FBI, Joint Terrorism Task Force (JTTF), Counter Terrorism Bureau And The NYPD Major Case Squad. Services Include But Are Not Limited To System Review, Design And Laboratory Analyses; Audio and Visual Security Systems, Sensitivity Of Security Systems Inspection To Meet Manufacturer Specifications, NFPA, UL, U.S. Customs Bonded Warehouse Standards, Nationally Recognized Industry Standards And Practices And Certified Fraud Examination And Investigation Services.

Personal Protection Systems 1995–Present

IDS Research And Development, Inc. 1998–Present

Intruder Detection Systems, Inc. 1999–Present

New York, New York

New Jersey

New Jersey

Design, Service, Installation And Maintenance Of (UL) Certificated And Non-UL Access Control, Burglar And Fire Alarm Systems For Residential And Commercial Properties With 24 Hour UL Listed Central Station Monitoring.

1996 – Present

Burglar And Fire Alarm Reporting Services™

Nationwide

A Loss Prevention And Risk Management Tool For The Insurance Industry That Analyzes All Types Of Burglar And Fire Alarm Systems To Minimize Loss Potential, And Takes The Guess Work Out Of Alarm System Performance Before A Loss Occurs.

1998 – Present

The Lightning Damage Claims Institute™

Nationwide

Nationwide Investigation And Certification Of Lightning Damage Claims To Burglar And Fire Alarm Systems And Other Low Voltage Equipment And Systems.

2003 – Present

The Alarm Test™

Nationwide

Nationwide Evaluation And Inspection Of Security And Fire Alarm Systems To Verify Compliance With The Equipment Manufacturer's Specifications, UL Standards, NFPA Standards And Nationally Recognized Industry Standards And Practices.

⁹ The ASIS certification program has been awarded accreditation by the American National Standards Institute (ANSI), the U.S. member of the International Organization for Standardization (ISO). This prestigious endorsement confirms that ASIS global certification programs adhere to the highest professional standards.

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Board Certified in Security Management

Nationwide: 800-353-0733

www.alarmexpert.com

EXPERTISE:

PRESENTATIONS AND TEACHING EXPERIENCE:

- May 2022, Executive Guest Lecturer, Alarm And Security Science, Private Security Trends And Movement Course, John Jay College Of Criminal Justice¹⁰, Manhattan, New York, For Jeremy Larsen, Graduate/Undergraduate Lecturer, Department Of Security, Fire, And Emergency Management, College Of Criminal Justice. Topics: The Security Survey, Needs Analysis, Central Station Duration, Frequency And Location Methodology In Making The Security System A Capable Guardian, The Routine Activity Approach Theory, Three Minimal Elements Of The Routine Activity Approach, Target Hardening, Crime Prevention Through Environmental Design (CPTED), Critical Detection Point (CDP), Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards, And Practices, Telephone Line Security Methodologies, Security System Reliability, The Crime Triangle, Cover, T And Overt Video Surveillance Systems, Verified Video, And Sonitrol Systems Using A Security System As A Capable Guardian, Quantifying Early Warning Detection To A Security Systems Effectiveness, The Criticality Of Central Station Notification To A Security Systems Effectiveness, Eleven Principles That Make Security System's Effective And Reliable, Circumvention Techniques Utilized By The Criminal Element, One And Two Way Radios, Interfacing Physical Security And Electronic Security, Forensic Case Studies, Indicators Of Fraud In Forensic Investigations, Are Security Systems Circumvented By The Criminal Element?, Are Security Systems Failing Due To Other Reasons?, Scientifically Examining Alarm System Failures And The Improper Methodologies Utilized, Foreseeability, Detectability, And Preventability, System Reliability- Mission Critical, Life Safety Detection Systems- Smoke, Heat And Carbon Monoxide Sensors, Early Warning, And Duty, One Size Fits All Approach Methodologies, Panic And Holdup Systems, Intrusion Detection Systems, Layers Of Detection And Protection, Concentric Circles Of Detection And Protection, UL Listed Safe Ratings, And The Theories Of Breach Of Duty, Proximate Cause, And Damages. Participants: Undergraduate And Graduate Students.
- April 2022, Instructor, The Top 25 Things That Management, Installers, Technicians & Service Techs Need To Know! Webinar, The Monitoring Association (TMA) Mid-Year Meeting. Topics: Limits On How Long An Account Can Be In Trouble And/Or Supervisory At The Remote Station, Signal Restorals, Action Plans For Notification, Holding Dealers Accountable, Log Only Events, Industry Standards For Polling Times, Cancel Abort Signals, False Alarms, NFPA 72 Minimum Standards, Functional Testing Of Conventional Smoke Detectors, Company Protective Terms and Conditions Regarding Device Replacement, Specialized Training For Employees, Communication Failures, End Of Line Resistor Supervision, Cancel Abort Monitoring, Special Instructions, Offer Yes/N Options To Subscribers, and Automated Test Supervision.
- April 2022, Instructor, A Forensic Expert's Analysis of Contractor Liability Webinar, Ohio Security & Fire Alarm Association¹¹ (OSFAA) Membership Meeting. Topics Duty, Breach Of Duty, Proximate Cause And Damages, Themes Of Liability Utilized Against Alarm Contractors, Data-Bus Danger, Law Suits Regarding Damages, How To Hold Yourself Out To The Public, Reasons Why Alarm Systems Fail, Alarm Contractor Actions, Defects And Irregularities In Alarm System Design, Installation, Programming, Servicing, Inspecting, Maintenance And Monitoring, Special Instructions, Log Only & Cancel Abort, Connecting To Existing Sprinkler Systems For Monitoring Only, Leaving Zones On Test, Alarm Contractor Contracts, Documentation, And Marketing, The Offering Of Services Methodologies, Connect To Existing System For Monitoring Only, System Upgrades, One Way vs. Two Way Radios, System Tests, Service Calls, NFPA 72, Ways To Help Minimize Liability From A Forensic Expert's Perspective, Liability In System Design, Installation And

¹⁰ Provide test questions based on the curriculum for Undergraduate and Graduate Students in The International Criminology And Crime And Justice Theory Courses.

¹¹ Formerly The Electronic Security Association of Ohio.

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Jeffrey D. Zwirn, CPP, CFPS, CFE, SET, FASI&T, CHPA-IV, NFPA 3000(PS), President
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 Nationwide: 800-353-0733
www.alarmexpert.com

Monitoring, Advanced Methodologies For Alarm Contractors In Minimization Of Liability Techniques, Foreseeability, The Crime Triangle, Crime Demographics, Supplemental Fire Alarm Systems And Case Studies.

- April 2022, Instructor, New Jersey Laws and Rules Governing the Provision of Burglar Alarm, Fire Alarm, and Locksmithing Services Webinar, New Jersey Electronic Life Safety Association (NJELSA). Topics: Definitions of Services, Common Exemptions From Licensing, Central Monitoring Stations License Requirements, Continuing Education Requirements, Advertisement Guidelines, Individual and Business Firm Licensing Requirements, Applications, Business Firm Qualifiers, Supervision Of Licensed And Unlicensed Employees, Standards Of Practice And Prohibited Practices and Acts, The Home Improvement Contractors Act, Contractor's Registration Act, And The Home Improvement Practice Regulations.
- March 2022, Instructor, A Forensic Expert's Analysis of Contractor Liability Webinar, Pennsylvania Burglar and Fire Alarm Association (PBFAA) Virtual Membership Meeting. Topics: Duty, Breach of Duty, Proximate Cause And Damages, Themes Of Liability Utilized Against Alarm Contractors, Data-Bus Danger, Subpoena Requests For Account File, Investigators, Reasons Why Alarm Systems Fail, Alarm Contractor Actions That Can Endanger The Welfare, Safety And Security Of A Subscriber, Defects And Irregularities In Alarm System Design, Installation, Programming, Servicing, Inspecting, Maintenance, And Monitoring, Special Instructions, Connecting To Existing Sprinkler Systems For Monitoring Only, Zones On Test, Alarm Contractor Contracts, Documentation, And Marketing, Offering Of Services Methodology, Connecting To Existing Systems For Monitoring Only, System Upgrades, One Way Vs. Two Way Radios, Testing Of Zones, NFPA 72, Ways To Help Minimize Liability From A Forensic Expert's Perspective, Liability In-System Design, Installation And Monitoring, Advanced Methodologies For Alarm Contractors In Minimization Of Liability Techniques, What Class of Subscriber Poses The Biggest Risk To My Company From A Liability Perspective, Foreseeability, The Crime Triangle, Crime Demographics, Primary Causes Of Liability For An Alarm Contractor, What To Expect If Your Company Is Sued Based On An Alleged Alarm System Failure, What Can You Do Now To Help Minimize Liability When Alarm Contracting, What If The Alarm System Was Not Armed At The Time Of The Loss, Do Burglar Alarms Pose A Lower Risk To My Company From A Liability Perspective Than Fire Alarm Systems, What If My Fire Alarm System Passes Inspection By The Authority Having Jurisdiction, What If The Alarm System Failure Was Due To An Inside Job, Proactively Implementing Advanced Policies And Procedures For Minimization Of Liability, Supplemental Fire Alarm Systems, Case Studies, End Of Line Resistors, Audible Indicating Appliances and Siren Drivers.
- March 2022, Instructor, New Jersey Laws and Rules Governing the Provision of Burglar Alarm, Fire Alarm, and Locksmithing Services Webinar, New Jersey Electronic Life Safety Association (NJELSA). Topics: Definitions of Services, Common Exemptions From Licensing, Central Monitoring Stations License Requirements, Continuing Education Requirements, Advertisement Guidelines, Individual and Business Firm Licensing Requirements, Applications, Business Firm Qualifiers, Supervision Of Licensed And Unlicensed Employees, Standards Of Practice And Prohibited Practices and Acts, The Home Improvement Contractors Act, Contractor's Registration Act, And The Home Improvement Practice Regulations.
- February 2022, Instructor, Got Liability? A Forensic Alarm Expert's Perspective, New Jersey Electronic Life Safety Association (NJELSA) Symposium & Annual Expo, Atlantic City, New Jersey. Topics: Duty, Breach of Duty, Proximate Cause And Damages, Themes Of Liability Utilized Against Alarm Contractors, Data-Bus Danger, Subpoena Requests For Account File, Investigators, Reasons Why Alarm Systems Fail, Alarm Contractor Actions That Can Endanger The Welfare, Safety And Security Of A Subscriber, Defects And Irregularities In Alarm System Design, Installation, Programming, Servicing, Inspecting, Maintenance, And Monitoring, Special Instructions, Connecting To Existing Sprinkler Systems For Monitoring Only, Zones On Test, Alarm Contractor Contracts, Documentation, And Marketing, Offering Of Services Methodology, Connecting To Existing Systems For Monitoring Only, System Upgrades, One Way Vs. Two Way Radios, Testing Of Zones, NFPA 72, Ways To Help Minimize Liability From A Forensic Expert's Perspective, Liability In-System Design, Installation And Monitoring, Advanced Methodologies For Alarm Contractors In Minimization Of Liability Techniques, What Class of Subscriber Poses The Biggest Risk To My Company From A Liability Perspective, Foreseeability, The Crime Triangle, Crime Demographics, Primary Causes Of

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Liability For An Alarm Contractor, What To Expect If Your Company Is Sued Based On An Alleged Alarm System Failure, What Can You Do Now To Help Minimize Liability When Alarm Contracting, What If The Alarm System Was Not Armed At The Time Of The Loss, Do Burglar Alarms Pose A Lower Risk To My Company From A Liability Perspective Than Fire Alarm Systems, What If My Fire Alarm System Passes Inspection By The Authority Having Jurisdiction, What If The Alarm System Failure Was Due To An Inside Job, Proactively Implementing Advanced Policies And Procedures For Minimization Of Liability, Supplemental Fire Alarm Systems, Case Studies, End Of Line Resistors, Audible Indicating Appliances and Siren Drivers.

- February 2022, Instructor, Security Surveys And Risk Analysis, New Jersey Electronic Life Safety Association (NJELSA) Symposium & Annual Expo, Atlantic City, New Jersey. Topics: What Is A Security Survey, How To Apply Security Surveys To Alarm Systems, What Is Risk Analysis, How To Apply Risk Analysis To Alarm Systems, The Crime Triangle, Crime Prevention Through Environmental Design (CPTED) Techniques And Methodologies, Performing A Security Survey: What To Do, What Not To Do, And How To Help Make Sure That You Have Not Missed Anything, Foreseeability, And Criticality, Quantifying Risk Analysis And Incorporating It Into The Security Survey, Applying The Crime Triangle Into The Security Survey, Utilizing CPTED In The Security Survey And Risk Analysis Of The Subject Premises, Written Reports And Recommendations, And Case Studies.
- December 2021, Virtual Instructor, *Risk Management: What Alarm Contractors And Monitoring Centers Need To Do Now To Help Better Protect Their Subscribers And Minimize Their Liability*, with Special Guest Morgan Hertel, President of The Monitoring Association (TMA) and VP of Technology and Innovation Rapid Response Monitoring Services, Incorporated, OPSTECH21, The Monitoring Association (TMA)¹². Topics: What Is The First Thing That Management Of A Central Station Likely Thinks Of When They Learn Of A Loss And/Or a Potential Claim Being Made Against Them, A Loss Occurs, And Questions Arise To The Monitoring Of The Alarm System, Case Study Of A Jewelry Store Burglary, The Way Central Stations Have Operated Does Not Always Recognize Risk Management, Not All Cases Are The Same, The Central Station, and Special Instructions.
- November 2021, Guest Instructor, *Protection Management Systems Seminar*, Department Of Security, Fire, And Emergency Management, John Jay College Of Criminal Justice, The City University of New York, Center For Protection And Safety, Manhattan, New York, Ph.D., CPP, Department Of Law, Police Science & Criminal Justice Administration, John Jay College Of Criminal Justice, New York, New York. Topics: The Security Survey, Needs Analysis, Central Station Duration, Frequency And Location Methodology In Making The Security System A Capable Guardian, The Routine Activity Approach Theory, Three Minimal Elements Of The Routine Activity Approach, Target Hardening, Crime Prevention Through Environmental Design (CPTED, Critical Detection Point (CDP), Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards, And Practices, Telephone Line Security Methodologies, Security System Reliability, The Crime Triangle, Cover,t And Overt Video Surveillance Systems, Verified Video, And Sonitrol Systems Using A Security System As A Capable Guardian, Quantifying Early

¹² The Monitoring Association (TMA) is the trade association representing the professional monitoring industry. Our membership community includes companies spanning all industry sectors, including monitoring centers, systems integrators, service providers, installers, consultants, and product manufacturers. TMA is dedicated to the advancement of the professional monitoring industry through education, advocacy, standards, and public safety relationships. TMA was incorporated on November 30, 1950, in Illinois as the Central Station Electrical Protection Association (CSEPA). In 1989, the Association formally changed its name to the Central Station Alarm Association (CSAA). In 2017, the Association was renamed "The Monitoring Association (TMA)." Since its founding in 1950, TMA has worked to foster and improve relations between its members and various related groups—law enforcement and fire officials, the insurance industry, equipment suppliers and government/regulatory agencies. The Monitoring Association (TMA) offers the Peer Reviewed Alarm Science Manual to its members during the 2021 Ops Tech Conference.

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Warning Detection To A Security Systems Effectiveness, The Criticality Of Central Station Notification To A Security Systems Effectiveness, Eleven Principles That Make Security System's Effective And Reliable, Circumvention Techniques Utilized By The Criminal Element, One And Two Way Radios, Interfacing Physical Security And Electronic Security, Forensic Case Studies, Indicators Of Fraud In Forensic Investigations, Are Security Systems Circumvented By The Criminal Element?, Are Security Systems Failing Due To Other Reasons?, Scientifically Examining Alarm System Failures And The Improper Methodologies Utilized, Foreseeability, Detectability, And Preventability, System Reliability- Mission Critical, Life Safety Detection Systems- Smoke, Heat And Carbon Monoxide Sensors, Early Warning, And Duty, One Size Fits All Approach Methodologies, Panic And Holdup Systems, Intrusion Detection Systems, Layers Of Detection And Protection, Concentric Circles Of Detection And Protection, UL Listed Safe Ratings, And The Theories Of Breach Of Duty, Proximate Cause, And Damages.

- October 2021, Guest Instructor, Protection Management Systems Seminar, *SEC 329 Security Risk And Technology*, Department Of Security, Fire, And Emergency Management, John Jay College Of Criminal Justice, The City University of New York, Center For Protection And Safety, Manhattan, New York, Ph.D., CPP, Department Of Law, Police Science & Criminal Justice Administration, John Jay College Of Criminal Justice, New York, New York. Topics: The Security Survey, Needs Analysis, Central Station Duration, Frequency And Location Methodology In Making The Security System A Capable Guardian, The Routine Activity Approach Theory, Three Minimal Elements Of The Routine Activity Approach, Target Hardening, Crime Prevention Through Environmental Design (CPTED, Critical Detection Point (CDP), Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards, And Practices, Telephone Line Security Methodologies, Security System Reliability, The Crime Triangle, Cover,t And Overt Video Surveillance Systems, Verified Video, And Sonitrol Systems Using A Security System As A Capable Guardian, Quantifying Early Warning Detection To A Security Systems Effectiveness, The Criticality Of Central Station Notification To A Security Systems Effectiveness, Eleven Principles That Make Security System's Effective And Reliable, Circumvention Techniques Utilized By The Criminal Element, One And Two Way Radios, Interfacing Physical Security And Electronic Security, Forensic Case Studies, Indicators Of Fraud In Forensic Investigations, Are Security Systems Circumvented By The Criminal Element?, Are Security Systems Failing Due To Other Reasons?, Scientifically Examining Alarm System Failures And The Improper Methodologies Utilized, Foreseeability, Detectability, And Preventability, System Reliability- Mission Critical, Life Safety Detection Systems- Smoke, Heat And Carbon Monoxide Sensors, Early Warning, And Duty, One Size Fits All Approach Methodologies, Panic And Holdup Systems, Intrusion Detection Systems, Layers Of Detection And Protection, Concentric Circles Of Detection And Protection, UL Listed Safe Ratings, And The Theories Of Breach Of Duty, Proximate Cause, And Damages.
- October 2021, Instructor, The Alarm Contractor: Policies and Procedures, New Jersey Electronic Life Safety Association Central Regional Meeting, Union, New Jersey. Topics: The Policies, Procedures, Customs, And Habits Of Alarm Contractors, Ways To Minimize Liability When Alarm Contracting, Minimum Industry Standards, Dealing With High-Risk Accounts, Advanced Documentation Methodologies, Case Studies, And System Impairments.
- August 2021, Presenter, Understanding Alarm Science From A Risk Control & Underwriting Perspective Webinar, Inland Marine Underwriters Association. Topics: What Is Alarm Science, Duties Of An Alarm Contractor, Contract Warranty And Safeguard Endorsements, Damaging Changes To UL 827-Central Station Alarm Services, Central Station Monitored Burglar And Fire Alarm Systems, Important Of Line Security, UL Certificated Burglar Alarm Systems, Risk Control, Underwriting, Fraud And Subrogation, And Case Studies. Participants: Industry Professionals From The Hartford, AXA XL, Sompo International, Starr Specialty Lines Agency, Inc., Travelers, Chubb, Nationwide Insurance, EIMC, Friends Of IMUA, Markel Specialty, Nationwide, Great American Insurance Group, Tokio Marine America, Liberty Mutual Insurance Group, Balance Partners, LLC, And Seneca Insurance Company.

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- April 2021, Presenter, Product Deficiencies In Konnected Products Webinar, Kirschenbaum & Kirschenbaum, Moderated By Kenneth Kirschenbaum, Attorney at Law. Topics: Correspondence From Nate Clark, Founder of Konnected, Konnected Product Line, And State of Florida Compliance Requirements.
- April 2021, Instructor, Alarm Science Boot Camp Webinar, Alarm Association Of Florida. Topics: UL 985, UL 1023, The Alarm System-A Silent Witness, Duties Of An Alarm Contractor, Misconceptions About Alarm Contractor Liability, Defeating Alarm Company Contracts, Duties Of A Remote Station And A Central Station, Serious Defects & Irregularities On Fire Alarm Systems, Theories Of Liability, And Case Studies.
- February 2021, Co-Presenter, Forensic Analysis of Non-Conforming Control Panel(s); The UL Issue Webinar, Kirschenbaum And Kirschenbaum, Moderated By Kenneth Kirschenbaum, Attorney at Law. Topics: Overview Of The Problem, UL Listed Non-Conforming Control Units, Demonstrative Testing Of Johnson Controls Power Series Pro, Dangerous Standards Violations, What Happens Next, and What If Johnson Controls Does Nothing?
- November 2020, Instructor, Reverse Engineering: Forensic Investigations Yields Mission Critical Information For Subrogation Recovery, National Association of Subrogation Professionals (NASP), Virtual Conference.
- July 2020, Instructor, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, New York City Police Academy, Virtual. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures.
- March 2020, Instructor, Residential and Commercial Non-Compliant Control Panels- The Risk is Real, New Jersey Electronic Life Safety Association Annual Expo and Symposium, Atlantic City, New Jersey. Topics: Determining Liability For The Alarm Contractor, Alarm Manufacturer, UL, And Intertek, Selling Your Alarm Company If You Have Selected, Installed, And Are Monitoring Non-Conforming Control Panels, Who Is To Blame, What Can Be Done, UL Standards, NFPA Standards, and Case Studies Presented Where Non-Conforming Control Panels Failed And The Forensic Investigations That Verified The Non-Conformity.
- November 2019, Instructor, You've Been Sued, Now What? Case Studies Of Forensic Liability, The International Security Conference & Exposition East 2019 (ISC East), New York, New York. Topics: When Is The Best Time To Prepare For A Lawsuit?, NFPA 72® Of The National Fire Alarm And Signaling Code And NFPA 72® The National Fire Alarm Code, UL® 985 Household Fire Warning System Units, 6th Edition, Do You Think That No Matter What You Do And/Or Do Not Do The Contract Will Always Limit Your Liability, The Four D's Of Security, Fundamentals, What's In Your Subscriber Files, A Focus On Liability/Risks, Risk, Risk Assessment, Codes & Standards, What Actions To Take If Your Company Is Sued, Active Shooter-Panic Alarm System, Case Studies, and Inside The Forensic Case Files.
- November 2019, Instructor, The Alarm Contractor: Policies & Procedures, NJESA Presentation, The International Security Conference & Exposition East 2019 (ISC East), New York, New York. Topics: The Policies, Procedures, Customs, And Habits Of Alarm Contractors, Ways To Minimize Liability When Alarm Contracting, Minimum Industry Standards, Dealing With High Risk Accounts, Advanced Documentation Methodologies, Case Studies, And System Impairments.

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- November 2019, Instructor, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, New York City Police Academy, College Point, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures.
- November 2019, Instructor, Extreme Alarm Science Boot Camp, 71st Annual Florida Fire Prevention Conference, Daytona Beach, Florida. Topics: The Alarm System-A Silent Witness, What An Alarm System Can Attest To, Preserving Equipment On Site, Case Studies Featuring Alarm System Failures, Case Studies Featuring Fraud Investigations, Scientifically And Technically Using The Forensic Analysis Of Alarm Systems In Arson, Fire, Subrogation, And Fraud Investigations, Identifying & Preserving Alarm System Evidence, Applying Equipment Manufacturer's Specifications, UL Standards, NFPA Standards, And Nationally Recognized Industry Standards And Practices For Security And Fire Alarm Systems In Arson, Fire And Loss Investigations, Analysis Of Central Station Database Activity, Duties Of An Alarm Contractor, Duties Of A Remote Station, Duties Of A Central Station, Theories Of Liability, Basic Components Of A Security System, Types Of Systems, Common Defects Found In Security Systems, Critical Detection Points, 25 Principles Of Alarm Science, End-Of-Line Resistor Supervision, Safes, Telephone Line Security Methodologies, One Way Radios, IP Communicators, Location Of Telephone Equipment, UL 1981, and Redundant Line Security Methodologies.
- August 2019, Presenter, Mission Impossible: Helping Subrogation Professionals Navigate Forensic Alarm System Investigations, Webinar. Topics: Liability Focus, Duties of An Alarm Contractor, NFPA 72® Inspection Testing, And Maintenance, Case Studies, The Claimant And The Alarm Company, and Mission Critical: Documentation & Preservation Of Evidence.
- August 2019, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2019 License Renewal, Existing Systems & Takeovers, Vector Security, Lawrenceville, New Jersey. Topics: Policies And Procedures When Connecting To Existing And Take Over Accounts That Your Company Did Not Design Or Install, Identifying Defects And Irregularities On Existing And Take Over Accounts, Documenting Services Provided To Help Minimize Liability, Documenting Services Not Being Provided To Help Minimize Liability, Offering Full System Inspections, Developing Policies And Procedures To Address Existing And Takeover Accounts So The Systems Reliability And Effectiveness Can Be Quantified, Common But Serious Mistakes And Case Studies.
- August 2019, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2019 License Renewal, Designing Fire Alarm Systems, Vector Security, Lawrenceville, New Jersey. Topics: Topics: Fire Alarm System Design Fundamentals, Overview Of Fire Alarm Systems, Codes And Standards Applicable To Fire Alarm System Design, Initiating Devices, Notification Appliances, Suppression Supervisory Equipment, Integration With Other Building Systems, Integration With Other Building Systems, Fire Alarm Control Unit (FACU), The Input-Output Matrix, UL, Detector Types, Detector Selection, Detection System Cost, Predominant Application, Detection Speed, Fire Alarm Control Units, Fire Alarm Power Supplies, Photoelectronic Smoke Detector, Ionization Smoke Detection, Heat Detectors, Visual Alarms, Wiring Types, Case Studies, And Fire Alarm System Science, Industry Standards,

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Recognized Practices And Standards Of The Technical Community Of The Fire Alarm Industry. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.

- August 2019 Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2019 License Renewal, Smoke Detectors-The Science Of Automatic Detection, eDist Security Distributing, Mahwah, New Jersey. Topics: Fire Science, Smoke Detector Operations And Functionality, Hardwired And Wireless Smoke Detectors, The Visible And Invisible Particles Of Combustion: Understanding The Micron, Smoldering Fires Vs. Fast Flaming Fires, Environmental Limitations Of Smoke Detectors, Technical Limitations Of Smoke Detectors, The Four Stages Of A Fire, Obscuration, Stratification, Equipment Manufacturers Specifications, NFPA, Codes And Standards, Quantifying The Reliability Of Smoke Detectors, UL Standard 217, UL Standard 268, UL Standard 985, UL Standard 864, NFPA 72® The National Fire Alarm Code®, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction (AHJ), International Residential Code (IRC), To Intentionally Exceed Fire Code Requirements Or Not, The Functional And Reliable Life Expectancy Of Smoke Detectors, Placement And Spacing, Different Types Of Smoke Detectors And Smoke Detection Systems, Two-Wire Smoke Detectors, Cross Listing Compatibility, Four Wire Smoke Detectors, Beam Detectors, Duct Detectors, Conventional Smoke Detection Systems, Addressable Smoke Detection Systems, Analog Addressable Smoke Detection Systems, Types Of Smoke Detection Coverage, Emerging Smoke Detection Technologies, Inspection, Testing And Maintenance Of Smoke Detectors, The Proper Methodology For Testing, Inspection And Maintenance, Identification Of Defects And Irregularities In Design, Recommendation, Application, Installation, Placement, Testing, Inspection, Maintenance, Repair And Monitoring Of Smoke Detectors, Functional Vs. Sensitivity Testing, Inherent Safeguards, Power Supervision Relays, End Of Line Resistor Supervision, Dangers And Hazards, Remote Momentary Of Toggle Reset Switch, T-Tapping, Special Applications Where Smoke Detectors Shall Be Installed And/Or Where The Occupancy Is Intrinsically Safe And Case Studies Where Fire Alarm Systems Failed And The Reasons Why. Participants: New Jersey Burglar And/Or Fire Alarm License Holders And NICET Certified Alarm Technicians.
- August 2019 Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2019 License Renewal, NFPA 3000(PS), Standard For An Active Shooter/Hostile Event Response (ASHER) Program, eDist Security Distributing, Mahwah, New Jersey. Topics: NFPA 3000(PS) And The Fire Service, Planning, Responding, Recovering, Building Sides, Casualty Collection Point, Incident Command, Planning, Cold Zone, Warm Zone, Hot Zone, Risk Assessment, Identifying Threats, At Risk Locations, Analyzing Consequences Of Attack, Cascading And Complex Coordinated Incidents, Community Risk Assessment, Facility Risk Assessment, Community Vulnerability, Goals Of Unified Command, NFPA 1561, Facility And Occupancy Characteristics, Law Enforcement, Competencies For Fire And EMS Responders, Threat-Based Care, Hot Zone Tasks, Warm Zone Tasks, Cold Zone Tasks, Personal Protective Equipment (PPE), Training, Resource Needs Analysis, Probability And Consequences, Technology, Mass Violence Toolkit, Law, Regulations, Consensus Standards, And Guidance Documents, NFPA 1500, NFPA 1561, And NFPA 1600.
- June 2019, Instructor, Extreme Alarm Science Boot Camp, Florida Association Of Fire And Life Safety Educators (FAFLSE) And The Florida Fire And Explosion Investigators (FFEIA) 2019 Joint Conference, *It All Started With A Spark*, Lake Buena Vista, Florida. Topics: The Alarm System-A Silent Witness, What An Alarm System Can Attest To, Preserving Equipment On Site, Case Studies Featuring Alarm System Failures, Case Studies Featuring Fraud Investigations, Scientifically And Technically Using The Forensic Analysis Of Alarm Systems In Arson, Fire, Subrogation, And Fraud Investigations, Identifying & Preserving Alarm System Evidence, Applying Equipment Manufacturer's Specifications, UL Standards, NFPA Standards, And Nationally Recognized Industry Standards And Practices For Security And Fire Alarm Systems In Arson, Fire And Loss Investigations, Analysis Of Central Station Database Activity, Duties Of An Alarm Contractor, Duties Of A Remote Station, Duties Of A Central Station, Theories Of Liability, Basic Components Of A Security System, Types Of Systems, Common Defects Found In Security Systems, Critical Detection Points, 25

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Principles Of Alarm Science, End-Of-Line Resistor Supervision, Safes, Telephone Line Security Methodologies, One Way Radios, IP Communicators, Location Of Telephone Equipment, UL 1981, and Redundant Line Security Methodologies.

- June 2019, Instructor, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, New York City Police Academy, College Point, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures.
- May 2019, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2019 License Renewal, Smoke Detectors-The Science Of Automatic Detection, eDist Security Distributing, Mahwah, New Jersey. Topics: Fire Science, Smoke Detector Operations And Functionality, Hardwired And Wireless Smoke Detectors, The Visible And Invisible Particles Of Combustion: Understanding The Micron, Smoldering Fires Vs. Fast Flaming Fires, Environmental Limitations Of Smoke Detectors, Technical Limitations Of Smoke Detectors, The Four Stages Of A Fire, Obscuration, Stratification, Equipment Manufacturers Specifications, NFPA, Codes And Standards, Quantifying The Reliability Of Smoke Detectors, UL Standard 217, UL Standard 268, UL Standard 985, UL Standard 864, NFPA 72® The National Fire Alarm Code®, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction (AHJ), International Residential Code (IRC), To Intentionally Exceed Fire Code Requirements Or Not, The Functional And Reliable Life Expectancy Of Smoke Detectors, Placement And Spacing, Different Types Of Smoke Detectors And Smoke Detection Systems, Two-Wire Smoke Detectors, Cross Listing Compatibility, Four Wire Smoke Detectors, Beam Detectors, Duct Detectors, Conventional Smoke Detection Systems, Addressable Smoke Detection Systems, Analog Addressable Smoke Detection Systems, Types Of Smoke Detection Coverage, Emerging Smoke Detection Technologies, Inspection, Testing And Maintenance Of Smoke Detectors, The Proper Methodology For Testing, Inspection And Maintenance, Identification Of Defects And Irregularities In Design, Recommendation, Application, Installation, Placement, Testing, Inspection, Maintenance, Repair And Monitoring Of Smoke Detectors, Functional Vs. Sensitivity Testing, Inherent Safeguards, Power Supervision Relays, End Of Line Resistor Supervision, Dangers And Hazards, Remote Momentary Of Toggle Reset Switch, T-Tapping, Special Applications Where Smoke Detectors Shall Be Installed And/Or Where The Occupancy Is Intrinsically Safe And Case Studies Where Fire Alarm Systems Failed And The Reasons Why. Participants: New Jersey Burglar And/Or Fire Alarm License Holders And NICET Certified Alarm Technicians.
- May 2019, Instructor, New Jersey Division of Consumer Affairs Approved Courses For Continuing Education Credits For the 2019 License Renewal, New Jersey Laws and Rules Governing the Provision of Burglar Alarm, Fire Alarm, and Locksmithing Services, eDist Security Distributing, Mahwah, New Jersey. Topics: Definitions of Services, Common Exemptions From Licensing, Central Monitoring Stations License Requirements, Continuing Education Requirements, Advertisement Guidelines, Individual and Business Firm Licensing Requirements, Applications, Business Firm Qualifiers, Supervision Of Licensed And Unlicensed Employees, Standards Of Practice And Prohibited Practices and Acts, The Home Improvement Contractors Act,

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Contractor's Registration Act, And The Home Improvement Practice Regulations. Participants: New Jersey Burglar And/Or Fire Alarm License Holders And NICET Certified Alarm Technicians.

- May 2019, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2019 License Renewal, New Jersey Uniform Construction Code, eDist Security Distributing, Mahwah, New Jersey. Topics: Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections, 5:23-2.21 Construction Control, 5:23-2.23 Certificate Requirements, Subchapter 3: Subcodes, 5:23-3.6: Standards; Accepted Practice, 5:23-3.8 Products Violating The Code, Subchapter 5: Licensing, 5:23-5.3 Types Of Licenses, Subchapter 6: Rehabilitation Subcode, 5:23-6.2 Applicability And Compliance, 5:23-6.3 Definitions, 5:23-6.4 Repairs, 5:23-6.5 Renovations, 5:23-6.6 Alterations, 5:23-6.7 Reconstruction, And 5:23-6.8 Materials And Method. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- May 2019, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2019 License Renewal, Americans With Disabilities Act (ADA), eDist Security Distributing, Mahwah, New Jersey. Topics: Americans With Disabilities ACT (ADA) Requirements And NFPA 72®, ADA Accessibility Guidelines For Building And Facilities (ADAAG), ADAAG In Comparison To DOJ Standards For Accessible Design And The International Building Code, Manual Pull Stations, Audible Warning Devices: Horns & Speakers, Visual Warning Devices: Strobe Lights, Activating A Manual Fire Alarm Box Requirements, And Emergency Call Systems: Supervised Sprinkler Systems. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- May 2019, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2019 License Renewal, Barrier Free Subcode, eDist Security Distributing, Mahwah, New Jersey. Topics: 5:23-7.1 Applicability, 5:23-7.2 Accessibility Standard, 5:23-7.4 Non-Residential Buildings And Buildings Of Use Group R-1, 5:23-7.5 Residential Buildings Other Than Group R-1, 5:23-7.11 Requirements Applicable To Specific Non-Residential Groups And Group R-1, 5:23-7.12 Requirements Applicable To All Non-Residential Groups, Including Spaces Other Than Guestrooms In Use Group R-1 And 5:23-7.13 Existing Facilities. New Jersey Uniform Construction Code, Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections. Participants: New Jersey Certified And Licensed Alarm Contractors And NICET Certified Alarm Technicians.
- May 2019, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For the 2019 License Renewal, Industrial Safety: NFPA 70E: Electrical Safety In The Workplace, eDist Security Distributing, Mahwah, New Jersey. Topics: Analysis And Technical Overview, Understanding And Applying The National Electrical Code In All Types Of Burglar, Fire Alarm And CCTV System Installations, Wiring Methods And Materials, Equipment For General Use, Special Occupancies, Divisions 1 And 2, Class I Locations, Class II Locations, Class III Locations, Intrinsically Safe Systems, NEC Tables, Article 725 Class 1, Class 2, And Class 3 Remote Control, Signaling, And Power Limited Circuits, Article 760: Fire Alarm Systems, Non-Power Limited Fire Alarms (NPLFA) Circuits, Power-Limited Fire Alarm (PLFA) Circuits, Optical Fiber Cables And Raceways, Overcurrent Protection, Location, Enclosures, Disconnecting, Grounding, Circuit And System Grounding, Grounding Electrode System And Electric Conductors, Enclosure, Raceway And Service Cable Grounding, Equipment Grounding, Methods Of Equipment Grounding, Direct Current Systems, Instruments, Meters And Relays, Surge Arrestors, Connecting Surge Arrestors, Ensuring NEC Compliance When Installing Burglar, Fire Alarm, And CCTV Systems, Common Errors In NEC Compliance And Checklists For Identification Of NEC Errors. Participants: New Jersey Certified And Licensed Alarm Contractors And NICET Certified Alarm Technicians.

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- April 2019, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Fire Alarm System Testing, Inspection & Maintenance, Lawrenceville, New Jersey. Topics: System Reliability, Detection Capabilities, Repair And/Or Replacement Of System Impairments, Testing, Inspection And Maintenance Standards, NFPA 72®, The Authority Having Jurisdiction, Nationally Recognized Industry Standards And Practices, Fire Alarm System Performance Criteria, Equipment Manufacturer Specifications, Life Expectancy Of Different Types Of Initiating Detection Devices, Quantifying Performance Of Fire Alarm Systems, Documentation, Inspection And Testing Records, Acceptance Testing, Re-Acceptance Testing, Delegation Of Duty For Maintenance On Fire Alarm Systems, AHJ Notification On System Impairments, And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders And NICET Certified Alarm Technicians.
- April 2019, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2019 License Renewal, Alarm Science, Lawrenceville, New Jersey. Topics: Analysis And Technical Overview Of Alarm Science, Equipment Manufacturer's Specifications, UL Standards And Nationally Recognized Industry Standards And Practices, Duties Of An Alarm Contractor, The 25 Principles Of Alarm Science, Identification Of Defects And Irregularities In Alarm System Design, Application, Installation, Programming, Service, Inspection, Maintenance, Testing, And Monitoring, Existing Systems, Takeovers, Liability, Policies, Procedures, Customs And Habits And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders And NICET Certified Alarm Technicians.
- April 2019, CO-Presenter, What Happened To Standards-Based Security? What Security Directors, Managers, Owners And Insurance Underwriters Need To Know, ISC West, Las Vegas, Nevada.
- March 2019, Instructor, Alarm Science Boot Camp For Arson Investigators, International Association of Arson Investigators (IAAI) Ohio Chapter Spring Conference, Ohio Fire Academy, Reynoldsburg, Ohio.
- March 2019, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2019 License Renewal, New Jersey Uniform Construction Code, Vector Security, Lawrenceville, New Jersey. Topics: Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections, 5:23-2.21 Construction Control, 5:23-2.23 Certificate Requirements, Subchapter 3: Subcodes, 5:23-3.6: Standards; Accepted Practice, 5:23-3.8 Products Violating The Code, Subchapter 5: Licensing, 5:23-5.3 Types Of Licenses, Subchapter 6: Rehabilitation Subcode, 5:23-6.2 Applicability And Compliance, 5:23-6.3 Definitions, 5:23-6.4 Repairs, 5:23-6.5 Renovations, 5:23-6.6 Alterations, 5:23-6.7 Reconstruction, And 5:23-6.8 Materials And Method. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- March 2019, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2019 License Renewal, Americans With Disabilities Act (ADA), Vector Security, Lawrenceville, New Jersey. Topics: Americans With Disabilities ACT (ADA) Requirements And NFPA 72®, ADA Accessibility Guidelines For Building And Facilities (ADAAG), ADAAG In Comparison To DOJ Standards For Accessible Design And The International Building Code, Manual Pull Stations, Audible Warning Devices: Horns & Speakers, Visual Warning Devices: Strobe Lights, Activating A Manual Fire Alarm Box Requirements, And Emergency Call Systems: Supervised Sprinkler Systems. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- March 2019, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2019 License Renewal, Barrier Free Subcode, Vector Security, Lawrenceville, New Jersey. Topics: 5:23-7.1 Applicability, 5:23-7.2 Accessibility Standard, 5:23-7.4 Non-Residential Buildings And Buildings Of Use Group R-1, 5:23-7.5 Residential Buildings Other Than Group R-1, 5:23-7.11 Requirements Applicable To Specific Non-Residential Groups And Group R-1, 5:23-7.12 Requirements Applicable To All Non-Residential Groups, Including Spaces Other Than Guestrooms In Use Group R-1 And 5:23-7.13 Existing Facilities. New Jersey Uniform Construction Code, Subchapter 2: Administration And

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Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections. Participants: New Jersey Certified And Licensed Alarm Contractors And NICET Certified Alarm Technicians.

- March 2019, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For the 2019 License Renewal, Industrial Safety: NFPA 70E: Electrical Safety In The Workplace, Vector Security, Lawrenceville, New Jersey. Topics: Analysis And Technical Overview, Understanding And Applying The National Electrical Code In All Types Of Burglar, Fire Alarm And CCTV System Installations, Wiring Methods And Materials, Equipment For General Use, Special Occupancies, Divisions 1 And 2, Class I Locations, Class II Locations, Class III Locations, Intrinsically Safe Systems, NEC Tables, Article 725 Class 1, Class 2, And Class 3 Remote Control, Signaling, And Power Limited Circuits, Article 760: Fire Alarm Systems, Non-Power Limited Fire Alarms (NPLFA) Circuits, Power-Limited Fire Alarm (PLFA) Circuits, Optical Fiber Cables And Raceways, Overcurrent Protection, Location, Enclosures, Disconnecting, Grounding, Circuit And System Grounding, Grounding Electrode System And Electric Conductors, Enclosure, Raceway And Service Cable Grounding, Equipment Grounding, Methods Of Equipment Grounding, Direct Current Systems, Instruments, Meters And Relays, Surge Arrestors, Connecting Surge Arrestors, Ensuring NEC Compliance When Installing Burglar, Fire Alarm, And CCTV Systems, Common Errors In NEC Compliance And Checklists For Identification Of NEC Errors. Participants: New Jersey Certified And Licensed Alarm Contractors And NICET Certified Alarm Technicians.
- March 2019, Instructor, NFPA 3000(PS), Standard For An Active Shooter/Hostile Event Response (ASHER) Program, New Jersey Electronic Security Association (NJESA) 2019 Annual Symposium, Atlantic City, New Jersey. Topics: NFPA 3000(PS) And The Fire Service, Planning, Responding, Recovering, Building Sides, Casualty Collection Point, Incident Command, Planning, Cold Zone, Warm Zone, Hot Zone, Risk Assessment, Identifying Threats, At Risk Locations, Analyzing Consequences Of Attack, Cascading And Complex Coordinated Incidents, Community Risk Assessment, Facility Risk Assessment, Community Vulnerability, Goals Of Unified Command, NFPA 1561, Facility And Occupancy Characteristics, Law Enforcement, Competencies For Fire And EMS Responders, Threat-Based Care, Hot Zone Tasks, Warm Zone Tasks, Cold Zone Tasks, Personal Protective Equipment (PPE), Training, Resource Needs Analysis, Probability And Consequences, Technology, Mass Violence Toolkit, Law, Regulations, Consensus Standards, And Guidance Documents, NFPA 1500, NFPA 1561, And NFPA 1600. Participants: New Jersey Certified And Licensed Alarm Contractors And NICET Certified Alarm Technicians.
- March 2019, Instructor, Security Surveys And Risk Analysis, New Jersey Electronic Security Association (NJESA) 2019 Annual Symposium, Atlantic City, New Jersey. Topics: What Is A Security Survey, How To Apply Security Surveys To Alarm Systems, What Is Risk Analysis, How To Apply Risk Analysis To Alarm Systems, The Crime Triangle, Crime Prevention Through Environmental Design (CPTED) Techniques And Methodologies, Performing A Security Survey: What To Do, What Not To Do, And How To Help Make Sure That You Have Not Missed Anything, Foreseeability And Criticality, Quantifying Risk Analysis And Incorporating It Into The Security Survey, Applying The Crime Triangle Into The Security Survey, Utilizing CPTED In The Security Survey And Risk Analysis Of The Subject Premises, Written Reports And Recommendations And Case Studies.
- March 2019, Instructor, Ambush, Holdup, and Panic Alarm Systems, New Jersey Electronic Security Association (NJESA) 2019 Annual Symposium, Atlantic City, New Jersey. Topics: Understanding The Criticality And Purpose Of Ambush, Holdup And Panic Alarm Systems In Residential And Commercial Premises, Understanding And Applying UL 636-The Standard Of Safety For Holdup Alarm Units In Protected Premises, Understanding And Applying The Proper Design, Programming, Location, Installation, Testing And Monitoring Of Ambush, Holdup, And Panic Alarm Systems, Nationally Recognized Industry Standards And

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Practices, UL 636 Scope, Terminology, Normal Operation Test, Circuit Protection Test, Power Supply Test, Types Of Remote Stations, Extent Of Protection, Bandit-Resisting Enclosure And Alarm, Semiautomatic-Alarm, Manual Alarm, Types Of Radio Frequency Operated Initiating Devices, Manufacturing And Production Tests, Marking, Accessory Equipment, Operation And Electrical Supervision, Power Supplies, Installation, Outside Cables, Wiring Inside Buildings, Maintenance, Standards For Components, Dual Action Vs. Single Action Initiating Devices, Design And Installation Of Holdup And Panic Alarms, The Security Survey, Threat Assessment, Type Of Risk, Accessibility, OSHA Standards Relating To High-Risk Robbery Environments, Industry Standards, Duties Of An Alarm Contractor When Recommending, Designing, Installing, Placing, Programming, Testing, Inspecting, And Monitoring Of Ambush, Holdup And Panic Alarm Systems, Installer Training, Subscriber Training, What The Perpetrator May Already Know About Panic And Holdup Alarm Systems-And How To Counter It, Ambush, Holdup And Panic Alarm Systems For Safes And Vaults, How To Ensure Functional, Technical, Operational And Monitoring Reliability Of Ambush, Holdup, And Panic Alarm Systems, The Crime Triangle And Criminality: Motive, Intent And Opportunity, And Forensic Case Studies Regarding Ambush, Holdup And Panic Alarm System.

- November 2018, Instructor, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, New York City Police Academy, College Point, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures.
- October 2018, Instructor, Extreme Alarm Science Boot Camp, International Association of Arson Investigators, Inc. (IAAI) Florida Chapter Annual Conference, Tampa, Florida. Topics: The Alarm System-A Silent Witness, What An Alarm System Can Attest To, Case Studies Featuring Alarm System Failures, Case Studies Feature Fraud Investigations, Scientifically And Technically Using The Forensic Analysis Of Alarm Systems In Arson, Fire, Subrogation, And Fraud Investigations, Identifying & Preserving Alarm System Evidence, Applying Equipment Manufacturer's Specifications, UL Standards, NFPA Standards, And Nationally Recognized Industry Standards And Practices For Security And Fire Alarm Systems In Arson, Fire And Loss Investigations, Analysis Of Central Station Database Activity, Duties Of An Alarm Contractor, Duties Of A Remote Station, Duties Of A Central Station, Theories Of Liability, Basic Components Of A Security System, Types Of Systems, Common Defects Found In Security Systems, Critical Detection Points, 25 Principles Of Alarm Science, End-Of-Line Resistor Supervision, Safes, Telephone Line Security Methodologies, One Way Radios, IP Communicators, Location Of Telephone Equipment, UL 1981, and Redundant Line Security Methodologies.
- September 2018, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2019 License Renewal, New Jersey Uniform Construction Code, Vector Security, Lawrenceville, New Jersey. Topics: Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections, 5:23-2.21

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Construction Control, 5:23-2.23 Certificate Requirements, Subchapter 3: Subcodes, 5:23-3.6: Standards; Accepted Practice, 5:23-3.8 Products Violating The Code, Subchapter 5: Licensing, 5:23-5.3 Types Of Licenses, Subchapter 6: Rehabilitation Subcode, 5:23-6.2 Applicability And Compliance, 5:23-6.3 Definitions, 5:23-6.4 Repairs, 5:23-6.5 Renovations, 5:23-6.6 Alterations, 5:23-6.7 Reconstruction, And 5:23-6.8 Materials And Method. Participants: New Jersey Certified And Licensed Alarm Contractors And NICET Certified Alarm Technicians.

- September 2018, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For the 2019 License Renewal, Industrial Safety: NFPA 70E: Electrical Safety In The Workplace, Vector Security, Lawrenceville, New Jersey. Topics: Analysis And Technical Overview, Understanding And Applying The National Electrical Code In All Types Of Burglar, Fire Alarm And CCTV System Installations, Wiring Methods And Materials, Equipment For General Use, Special Occupancies, Divisions 1 And 2, Class I Locations, Class II Locations, Class III Locations, Intrinsically Safe Systems, NEC Tables, Article 725 Class 1, Class 2, And Class 3 Remote Control, Signaling, And Power Limited Circuits, Article 760: Fire Alarm Systems, Non-Power Limited Fire Alarms (NPLFA) Circuits, Power-Limited Fire Alarm (PLFA) Circuits, Optical Fiber Cables And Raceways, Overcurrent Protection, Location, Enclosures, Disconnecting, Grounding, Circuit And System Grounding, Grounding Electrode System And Electric Conductors, Enclosure, Raceway And Service Cable Grounding, Equipment Grounding, Methods Of Equipment Grounding, Direct Current Systems, Instruments, Meters And Relays, Surge Arrestors, Connecting Surge Arrestors, Ensuring NEC Compliance When Installing Burglar, Fire Alarm, And CCTV Systems, Common Errors In NEC Compliance And Checklists For Identification Of NEC Errors. Participants: New Jersey Certified And Licensed Alarm Contractors And NICET Certified Alarm Technicians.
- September 2018, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2019 License Renewal, Fire Alarm, Burglar Alarm And Locksmith Laws And Regulations, Vector Security, Lawrenceville, New Jersey. Topics: General Provisions Regarding Licensing Of Alarm And Locksmith Businesses, Locksmith Licensure Regulations, And Burglar Alarm And Fire Alarm License Requirements. Participants: New Jersey Certified And Licensed Alarm Contractors And NICET Certified Alarm Technicians.
- September 2018, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2019 License Renewal, Barrier Free Subcode, Vector Security, Lawrenceville, New Jersey. Topics: 5:23-7.1 Applicability, 5:23-7.2 Accessibility Standard, 5:23-7.4 Non-Residential Buildings And Buildings Of Use Group R-1, 5:23-7.5 Residential Buildings Other Than Group R-1, 5:23-7.11 Requirements Applicable To Specific Non-Residential Groups And Group R-1, 5:23-7.12 Requirements Applicable To All Non-Residential Groups, Including Spaces Other Than Guestrooms In Use Group R-1 And 5:23-7.13 Existing Facilities. New Jersey Uniform Construction Code, Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections. Participants: New Jersey Certified And Licensed Alarm Contractors And NICET Certified Alarm Technicians.
- June 2018, Extreme Alarm Science Boot Camp, SP&T Security Summit Canada, Mississauga, Ontario¹³. Topics: Duties of Security System Contractors And/Or Central Stations, Legal Theories, Legal Arguments Used To Bypass Security System Contractor And/Or Central Station Monitoring Contracts, Defeating Security System And/or Central Station Monitoring Contracts, Duties of Security System Contractors And/Or Central Stations, What The Alarm Industry Says, Alarm Science or Junk Science, Temperature Sensors, Questions

¹³ This event was sponsored by GAS, Alarm.com, Stanley Security, Anixter, Armstrong's, CDVI, DFENDUS, UL, CANASA, The Monitoring Association, and Harding Security Services, Incorporated.

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Regarding Your Policies, Procedures, And Operations, Questions Regarding Your Central Station, Policies, Procedures, Customs & Habits, and What Actions To Take If Your Company Is Sued. Participants: Business Development Mangers and Security Consultants of Alarm Boss Incorporated, Account Executives and Director of National Sales (Canada) of Alarm.com, Vice President of Operations, Special Advisor, and Vice President-Connected Home of AlarmForce Industries, Marketing Manager and Operations Manager of Alarmtech Security Systems, Inc., Sales & Service and President of Alliance Security Systems, Vice President (Central), Branch Manager, and Inside Sales of Anixter, Director of Business Development of Armstrongs National Alarm Monitoring, Senior Associate-Corporate Development of Avante Logixx, Inc., Vice President of Avante Security, General Manager of Birdseye Security, Incorporated, BDM (Canada) of Boon Edam, Incorporated, Regional Sales Manager of Brivo, Vice President and Regional Sales Manager of CDVI Americas, Associate Managing Director, Managing Director, and Group Head of CIBC, Head of Security of City of Mississauga, Security Design Project Manager of Crossey Engineering Ltd., President and Operations Manager of DFENDUS Security Solutions, Incorporated, Director of Sales and Business Development (Canada) and CEO of Feenics, Incorporated, Director of Fenris Solutions, Consultant of FPSP, Vice President of Marketing, National Director-Marketing & Communications, Marketing Coordinator, General Manger-Secure Integration, Senior Vice President-Sales and Marketing, and Product Manager of G4S Canada, Special Advisor to the CEO of Garda World, Account Manager-Security of Graybar Canada, President of Harding Security Services, Incorporated, Canada Leader-Vice President of Honeywell, Chief Operating Officer of Huronia Alarm & Fire Security, Incorporated, Vice President-Institutional Research and EVP, Co-Head of Investing Banking of Imperial Capital, LLC, Vice President-Engineering of Microm Technologies, Ltd., Sales Manager, Central Station Manager, President, and General Manager of PasWord Protection Services, Incorporated, President of Pre-Lock Security Services, Inc., President of Provident Security Corporation, Senior Product Manager, RSHM of Rogers Communication, Incorporated, President of Securex Financial Corporate, Business Development Manager of Securitas, Signal Receiving Centre Manager of Security Response Center, Director of Business Development of SecurTek Monitoring Solutions, President of Sentinel Alarm, Director of Smart Systems, General Manager of Tech Systems of Canada, Incorporated, Human Resources Representative and President of The Monitoring Center, Consultant of Thrive Business Consultants, President of TRG Associates, Incorporated, General Manager of True Steel Security, Sales Manager, Senior Staff Engineering Associate, Senior Account Executive, and Marketing Manager of ULC, Sales Representatives of Vipond, and Director of Sales and Technical Support Specialist of www.fscur.com.

- June 2018, Your Company on Trial™ Now What?, SP&T Security Summit Canada, Mississauga, Ontario. Topics: Case Studies, Anatomy Of A Lawsuit, Theories Of Liability, Your File And Records, and The System. Participants: Participants: Business Development Mangers and Security Consultants of Alarm Boss Incorporated, Account Executives and Director of National Sales (Canada) of Alarm.com, Vice President of Operations, Special Advisor, and Vice President-Connected Home of AlarmForce Industries, Marketing Manager and Operations Manager of Alarmtech Security Systems, Inc., Sales & Service and President of Alliance Security Systems, Vice President (Central), Branch Manager, and Inside Sales of Anixter, Director of Business Development of Armstrongs National Alarm Monitoring, Senior Associate-Corporate Development of Avante Logixx, Inc., Vice President of Avante Security, General Manager of Birdseye Security, Incorporated, BDM (Canada) of Boon Edam, Incorporated, Regional Sales Manager of Brivo, Vice President and Regional Sales Manager of CDVI Americas, Associate Managing Director, Managing Director, and Group Head of CIBC, Head of Security of City of Mississauga, Security Design Project Manager of Crossey Engineering Ltd., President and Operations Manager of DFENDUS Security Solutions, Incorporated, Director of Sales and Business Development (Canada) and CEO of Feenics, Incorporated, Director of Fenris Solutions, Consultant of FPSP, Vice President of Marketing, National Director-Marketing & Communications, Marketing Coordinator, General Manger-Secure Integration, Senior Vice President-Sales and Marketing, and Product Manager of G4S Canada, Special Advisor to the CEO of Garda World, Account Manager-Security of Graybar

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Canada, President of Harding Security Services, Incorporated, Canada Leader-Vice President of Honeywell, Chief Operating Officer of Huronia Alarm & Fire Security, Incorporated, Vice President-Institutional Research and EVP, Co-Head of Investing Banking of Imperial Capital, LLC, Vice President-Engineering of Microm Technologies, Ltd., Sales Manager, Central Station Manager, President, and General Manager of PasWord Protection Services, Incorporated, President of Pre-Lock Security Services, Inc., President of Provident Security Corporation, Senior Product Manager, RSHM of Rogers Communication, Incorporated, President of Securex Financial Corporate, Business Development Manager of Securitas, Signal Receiving Centre Manager of Security Response Center, Director of Business Development of SecurTek Monitoring Solutions, President of Sentinel Alarm, Director of Smart Systems, General Manager of Tech Systems of Canada, Incorporated, Human Resources Representative and President of The Monitoring Center, Consultant of Thrive Business Consultants, President of TRG Associates, Incorporated, General Manager of True Steel Security, Sales Manager, Senior Staff Engineering Associate, Senior Account Executive, and Marketing Manager of ULC, Sales Representatives of Vipond, and Director of Sales and Technical Support Specialist of www.fscur.com.

- March 2018, Ambush, Holdup, and Panic Alarm Systems, New Jersey Electronic Security Association (ESA) 2018 Annual Symposium, Atlantic City, New Jersey. Topics: Understanding The Criticality And Purpose Of Ambush, Holdup And Panic Alarm Systems In Residential And Commercial Premises, Understanding And Applying UL 636-The Standard Of Safety For Holdup Alarm Units In Protected Premises, Understanding And Applying The Proper Design, Programming, Location, Installation, Testing And Monitoring Of Ambush, Holdup, And Panic Alarm Systems, Nationally Recognized Industry Standards And Practices, UL 636 Scope, Terminology, Normal Operation Test, Circuit Protection Test, Power Supply Test, Types Of Remote Stations, Extent Of Protection, Bandit-Resisting Enclosure And Alarm, Semiautomatic-Alarm, Manual Alarm, Types Of Radio Frequency Operated Initiating Devices, Manufacturing And Production Tests, Marking, Accessory Equipment, Operation And Electrical Supervision, Power Supplies, Installation, Outside Cables, Wiring Inside Buildings, Maintenance, Standards For Components, Dual Action Vs. Single Action Initiating Devices, Design And Installation Of Holdup And Panic Alarms, The Security Survey, Threat Assessment, Type Of Risk, Accessibility, OSHA Standards Relating To High-Risk Robbery Environments, Industry Standards, Duties Of An Alarm Contractor When Recommending, Designing, Installing, Placing, Programming, Testing, Inspecting, And Monitoring Of Ambush, Holdup And Panic Alarm Systems, Installer Training, Subscriber Training, What The Perpetrator May Already Know About Panic And Holdup Alarm Systems-And How To Counter It, Ambush, Holdup And Panic Alarm Systems For Safes And Vaults, How To Ensure Functional, Technical, Operational And Monitoring Reliability Of Ambush, Holdup, And Panic Alarm Systems, The Crime Triangle And Criminality: Motive, Intent And Opportunity, And Forensic Case Studies Regarding Ambush, Holdup And Panic Alarm System.
- May 2018, Alarm Science Boot Camp For Arson & Fire Investigators¹⁴, 2018 International Association of Arson Investigators (IAAI) International Training Conference & Expo, Frisco Texas. Topics: The Alarm System-A Silent Witness, What The Alarm System Can Attest To, Preservation Of Alarm Equipment, Duties Of An Alarm Contractor, Misconceptions About Alarm Contractor Liability, Defeating Alarm Company Contracts, Duties Of A Remote Station And A Central Station, Forms Of Remote Station Communications, Serious Defects & Irregularities On Fire Alarm Systems, Theories Of Liability, Basic Components Of A Security System, Types Of Systems, Common Defects Found In Security Systems, On Site Equipment, and Forensic Case Studies.
- May 2018, Ambush, Holdup, And Panic Alarm Systems, Pennsylvania Burglar and Fire Alarm Association (PBFAA) Annual Expo, Erie, Pennsylvania. Topics: The Alarm Contractor, Purpose, Nationally Recognized Industry Standards and Practices, UL 636, Design, Placement & Installation Of Holdup And Panic Alarms, Design, Placement, & Installation of Holdup and Panic Alarms, The Crime Triangle And Criminality, Forensic

¹⁴ Awarded Certificate of Recognition For 2 Hours Of Outstanding Instruction.

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Case Studies, The Purpose of Ambush Signals, The Purpose Of A Panic and/or Holdup System, OSHA Recommendations For Workplace Violence Prevention Programs In Late-Nate Establishments, Risk Factors, Occupational Safety and Health Act, Worksite Hazard Analysis, Prevention Strategies, Engineering Controls and Administrative and Work Practice Controls.

- March 2018, Commercial Security and Fire Alarm Systems, New Jersey Security Association (ESA) 2018 Annual Symposium, Atlantic City, New Jersey. Topics: Minimization Of Loss, Proper Recommendation, Application, Installation, Service, Maintenance And Monitoring Of Commercial Security And Fire Alarm Systems, Existing Systems, Equipment Manufacturers Specification, Applicable UL Standards, NFPA Standards And Nationally Recognized Industry Standards And Practices, VOIP Dangers, Testing And Completion, Loss Potential, Detection Principles, Minimum Standards, Initiating Devices, Perimeter Vs. Motion Detection, Partial Perimeter Vs. Full Perimeter, Stay Shunting, Hardwired, Wireless And Hybrid Systems, Telephone Line Security Options, Smoke Detection, Heat Detection, Carbon Monoxide Detection, Gas Detection, Wet And Dry Sprinkler Systems, Exceeding Code Requirements And Case Studies. February 2018, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2019 License Renewal, Fire Alarm, Burglar Alarm And Locksmith Laws And Regulations, Hackensack, New Jersey. Topics: General Provisions Regarding Licensing Of Alarm And Locksmith Businesses, Locksmith Licensure Regulations, And Burglar Alarm And Fire Alarm License Requirements. Participants: New Jersey Certified And Licensed Alarm Contractors And NICET Certified Alarm Technicians.
- February 2018, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2019 License Renewal, New Jersey Uniform Construction Code, Hackensack, New Jersey. Topics: Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections, 5:23-2.21 Construction Control, 5:23-2.23 Certificate Requirements, Subchapter 3: Subcodes, 5:23-3.6: Standards; Accepted Practice, 5:23-3.8 Products Violating The Code, Subchapter 5: Licensing, 5:23-5.3 Types Of Licenses, Subchapter 6: Rehabilitation Subcode, 5:23-6.2 Applicability And Compliance, 5:23-6.3 Definitions, 5:23-6.4 Repairs, 5:23-6.5 Renovations, 5:23-6.6 Alterations, 5:23-6.7 Reconstruction, And 5:23-6.8 Materials And Method.
- February 2018, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2019 License Renewal, Barrier Free Subcode, Hackensack, New Jersey. Topics: 5:23-7.1 Applicability, 5:23-7.2 Accessibility Standard, 5:23-7.4 Non-Residential Buildings And Buildings Of Use Group R-1, 5:23-7.5 Residential Buildings Other Than Group R-1, 5:23-7.11 Requirements Applicable To Specific Non-Residential Groups And Group R-1, 5:23-7.12 Requirements Applicable To All Non-Residential Groups, Including Spaces Other Than Guestrooms In Use Group R-1 And 5:23-7.13 Existing Facilities. New Jersey Uniform Construction Code, Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections.
- February 2018, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2019 License Renewal, Americans With Disabilities Act (ADA), Hackensack, New Jersey. Topics: Americans With Disabilities ACT (ADA) Requirements And NFPA 72®, ADA Accessibility Guidelines For Building And Facilities (ADAAG), ADAAG In Comparison To DOJ Standards For Accessible Design And The International Building Code, Manual Pull Stations, Audible Warning Devices: Horns & Speakers, Visual Warning Devices: Strobe Lights, Activating A Manual Fire Alarm Box.
- February 2018, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For the 2019 License Renewal, Industrial Safety: NFPA 70E: Electrical Safety In The Workplace, Hackensack, New Jersey. Topics: Analysis And Technical Overview, Understanding And

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Applying The National Electrical Code In All Types Of Burglar, Fire Alarm And CCTV System Installations, Wiring Methods And Materials, Equipment For General Use, Special Occupancies, Divisions 1 And 2, Class I Locations, Class II Locations, Class III Locations, Intrinsically Safe Systems, NEC Tables, Article 725 Class 1, Class 2, And Class 3 Remote Control, Signaling, And Power Limited Circuits, Article 760: Fire Alarm Systems, Non-Power Limited Fire Alarms (NPLFA) Circuits, Power-Limited Fire Alarm (PLFA) Circuits, Optical Fiber Cables And Raceways, Overcurrent Protection, Location, Enclosures, Disconnecting, Grounding, Circuit And System Grounding, Grounding Electrode System And Electric Conductors, Enclosure, Raceway And Service Cable Grounding, Equipment Grounding, Methods Of Equipment Grounding, Direct Current Systems, Instruments, Meters And Relays, Surge Arrestors, Connecting Surge Arrestors, Ensuring NEC Compliance When Installing Burglar, Fire Alarm, And CCTV Systems, Common Errors In NEC Compliance And Checklists For Identification Of NEC Errors.

- May 2017, Instructor, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, New York City Police Academy, College Point, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures. Participants: Police Officers From the 7th, 13th, 17th, 28th, 30th, 46th, 48th, 50th, 60th, 66th, 81st, 93rd, 94th, 107th, 112th, 114th, 115th, and 120th Precincts, Representatives From the NYPD Special Services Division, Police Officer from The World Trade Center Command Unit, Sergeants, Detectives and Police Officers From Patrol Borough Brooklyn North, Sergeants From Patrol Borough Queens North, Police Officers From Police Service Areas 2 and 4, Police Officers From The Corruption Prevention Division, and Police Officers From Midtown South.
- March 2017, Instructor, When Bad Things Happen To Good Alarm Companies: The Forensic Science of Minimizing Risk, Security Sales & Integration Webcast Series, Moderated By Scott Gold Fine, Editor-in-Chief, Security Sales & Integration Magazine.
- March 2017, Instructor, Existing Systems & Takeovers, New Jersey Electronic Security Association (ESA) 2017 Annual Symposium, Atlantic City, New Jersey. Topics: Policies And Procedures When Connecting To Existing And Take Over Accounts That Your Company Did Not Design Or Install, Identifying Defects And Irregularities On Existing And Take Over Accounts, Documenting Services Provided To Help Minimize Liability, Documenting Services Not Being Provided To Help Minimize Liability, Offering Full System Inspections, Developing Policies And Procedures To Address Existing And Takeover Accounts So The Systems Reliability And Effectiveness Can Be Quantified, Common But Serious Mistakes And Case Studies.
- March 2017, Instructor, International Residential Code, New Jersey Electronic Security Association (ESA) 2017 Annual Symposium, Atlantic City, New Jersey. Topics: Topics: Pertinent Sections Of The IRC For Burglar And Fire Alarm Contractors, Title, Scope, Purpose, Department Of Building Safety, Permits, Construction Documents, Temporary Structures And Uses, Fees, Inspections, Certificate Of Occupancy, Board Of Appeals, Violations, Stop Work Order, Definitions, Building Planning And Construction, Smoke Detection And Notification, NFPA 72®, Location, Alterations, Repairs, Additions, Exceptions, Power Source, Emergency Escape And Rescue Openings, Means Of Egress, Guards, Electrical Definitions, Branch,

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Circuit And Feeder Requirements, Branch Circuit Ratings, Conductor Sizing And Overcurrent Protection, Class 2 Remote-Control Signaling And Power-Limited Circuits, Power Sources, Wiring Methods, Installation Requirements, ICC International Residential Code Electrical Provisions, National Electrical Code Cross Reference And Fire Sprinkler Systems.

- March 2017, Instructor, The Alarm Contractor Policies And Procedures, New Jersey Electronic Security Association (ESA) 2017 Annual Symposium, Atlantic City, New Jersey. Topics: The Policies, Procedures, Customs, And Habits Of Alarm Contractors, Ways To Minimize Liability When Alarm Contracting, Minimum Industry Standards, Dealing With High Risk Accounts, Advanced Documentation Methodologies, Case Studies, And System Impairments.
- March 2017, Instructor, Overt And Covert CCTV Systems, New Jersey Electronic Security Association (ESA) 2017 Annual Symposium, Atlantic City, New Jersey. Topics: Proper Design And Installation Of CCTV Systems, Understanding The Differences Between Overt And Covert CCTV Systems, Liability Concerns When Installing CCTV Systems, Types Of Occupancies, Lighting, Security Concerns, Vandalism, Prior Loss History, Purpose Of System, Expectation Of Privacy, Equipment Manufacturer's Specifications, Onsite Surveillance, Remote View, DVR Technologies.
- March 2017, Instructor, All You Need To Know About Fire Alarm Systems And Taking Over Fire Alarm Systems Webinar, Kirschenbaum And Kirschenbaum, Moderated By Kenneth Kirschenbaum, Attorney at Law.
- November 2016, Guest Speaker, Lessons Learned From Forensic Alarm Science, ASIS International, West Jersey Chapter 18th Annual All Day Seminar, Randolph, New Jersey. Topics: Criticality Of Complying With Industry Standards, Case Studies, Investigative Findings, Panic Buttons, Forensic Audio Clips And Continuous Recordings, Sensitivity Of Security Microphones, And Utilizing The Alarm System As A Silent Witness. Participants: New York State Homeland Security Officials, Cause & Origin Investigators, Fire Officials, Fire Marshalls, And Authorities Having Jurisdiction.
- November 2016, Instructor, Forensic Examination Of Alarm Systems, New York State Homeland Security And Emergency Services-Fire Prevention And Control's¹⁵ 42 Annual Arson Seminar¹⁶, New York State Academy Of Fire Science, Montour Falls, New York. Topics: The Alarm System-A Silent Witness, What The Alarm System Can Attest To, Case Studies, How To Scientifically And Technically Use The Forensic Analysis Of An Alarm System In Arson, Fire, Subrogation And Fraud Investigations, Identifying & Preserving Alarm System Evidence, Preservation Of Alarm Equipment Evidence And What It Reveals, Applying Equipment Manufacturer's Specifications, UL Standards, NFPA Standards And Nationally Recognized Industry Standards And Practices For Security And Fire Alarm Systems In Arson, Fire And Loss Investigations, Analysis Of Central Station Database Activity, Safes, UL 687, Telephone Line Security Methodologies, Advantages And Benefits, If Any, Of Telephone Line Security, What Is A One Way Radio?, What Is An IP Communicator, Location Of Telephone Equipment, UL 981, And Redundant Line Security Methodologies. Participants: Local And Federal Law Enforcement Authorities.
- October, 2016, Instructor, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, Metrotech Center, JP Morgan Chase, Brooklyn, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards,

¹⁵ Our mission is to assist our members in the advancement of their skills and knowledge as Fire Investigators. To facilitate the sharing of new information, ideas, and techniques in the field of Fire Investigation, and to promote a teamwork approach in the investigation of fires.

¹⁶ This year's theme will be "Fire Investigation Start To Finish"; with concentration on getting it right from scene processing, to report writing, and court room testimony, ensuring a just and proper conclusion. The Office of Fire Prevention and Control has made major changes to the format for the year's program. Those changes include; Broadcasting all of the presentations to allow attendees to participate in every one, Attendance Verification via barcode scanning, The National Pro Board Fire Investigator Certification Exam will be offered on Wednesday, November 2, 2016, PRIOR to the start of the Seminar.

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UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures. Participants: Police Officers From the 7th, 13th, 17th, 28th, 30th, 46th, 48th, 50th, 60th, 66th, 81st, 93rd, 94th, 107th, 112th, 114th, 115th, and 120th Precincts, Representatives From the NYPD Special Services Division, Police Officer from The World Trade Center Command Unit, Sergeants, Detectives and Police Officers From Patrol Borough Brooklyn North, Sergeants From Patrol Borough Queens North, Police Officers From Police Service Areas 2 and 4, Police Officers From The Corruption Prevention Division, and Police Officers From Midtown South.

- August 2016, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2016 License Renewal, Fire Alarm, Burglar Alarm And Locksmith Laws And Regulations, Vector Security, Lawrenceville, New Jersey. Topics: General Provisions Regarding Licensing Of Alarm And Locksmith Businesses, Locksmith Licensure Regulations, And Burglar Alarm And Fire Alarm License Requirements. Participants: New Jersey Certified And Licensed Alarm Contractors And NICET Certified Alarm Technicians. Topics: Fire Alarm System Design Fundamentals, Overview Of Fire Alarm Systems, Codes And Standards Applicable To Fire Alarm System Design, Initiating Devices, Notification Appliances, Suppression Supervisory Equipment, Integration With Other Building Systems, Integration With Other Building Systems, Fire Alarm Control Unit (FACU), The Input-Output Matrix, UL, Detector Types, Detector Selection, Detection System Cost, Predominant Application, Detection Speed, Fire Alarm Control Units, Fire Alarm Power Supplies, Photoelectronic Smoke Detector, Ionization Smoke Detection, Heat Detectors, Visual Alarms, Wiring Types, Case Studies, And Fire Alarm System Science, Industry Standards, Recognized Practices And Standards Of The Technical Community Of The Fire Alarm Industry.
- August 2016, Instructor, When Bad Things Happen To Alarm Companies, New York State Electronic Security Association Annual Conference, Verona, New York. Topics: Are Security Systems Helpful In Hardening The Target To Reduce Crimes, Are Security Systems Being Circumvented By The Criminal Element?, Are Security Systems Failing Due To Other Causes?, The Crime Triangle, How Important Is Early Warning To A Fire Alarm System's Effectiveness?, How Important Is Police Or Fire Department Response To A Security System's Effectiveness?, Educating The Customer, Duty, Breach Of Duty, Proximate Cause, Damages, Foreseeability, Detectability, Preventability, Theories Of Legal Liability When Connecting To An Existing Alarm System For Central Station Monitoring That Your Company Did Not Design, Program, Install, Service, Or Ever Maintain?, Liability Or Minimization Of Liability?, Alarm Contractor Duties, And Alarm Science Or Junk Science. Participants: Alarm Installers, Technicians, Service Personnel, Sales Professionals, Central Station Operators, Supervisors, Upper Management, And Presidents Of Alarm Companies And System Integrators.
- August 2016, Instructor, Alarm Science, IAAI Tennessee Chapter 2016 Annual Training Conference, Pigeon Forge, Tennessee. Topics: Analysis And Technical Overview Of Alarm Science, Equipment Manufacturer's Specifications, UL Standards And Nationally Recognized Industry Standards And Practices, Duties Of An Alarm Contractor, The 25 Principles Of Alarm Science, Identification Of Defects And Irregularities In Alarm System Design, Application, Installation, Programming, Service, Inspection, Maintenance, Testing, And Monitoring, Existing Systems, Takeovers, Liability, Policies, Procedures, Customs And Habits And Case

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Studies. Participants: Cause & Origin Investigators, Arson Investigators, Local And Federal Law Enforcement, And Authorities Having Jurisdiction.

- July 2016, Instructor, How Secure Are Your Security Alarm Systems Webinar, ASIS International.
- June 2016, Keynote Speaker, Guest Lecturer, Forensic Analysis Of Alarm Systems, Annual Insurance Fraud Conference, Sponsored By The Illinois Chapter of International Association Of Special Investigation Units (IASIU), Addison, Illinois. Topics: The Alarm System- A Silent Witness, What Can The Alarm System Attest To, Case Studies, How To Scientifically And Technically Use The Forensic Analysis Of An Alarm System In Arson, Fire, Subrogation, And Fraud Investigations, Identifying & Preserving Alarm System Evidence, Preservation Of Alarm Equipment Evidence, Applying Equipment Manufacturer's Specifications, UL Standards, NFPA Standards, And Industry Standards And Practices For Security And Fire Alarm Systems In Arson, Fire And Loss Investigations, Analysis Of Central Station Database Activity, Duties Of An Alarm Contractor, Duties Of A Remote Station, Duties Of A Central Station, Theories Of Liability, Basic Components Of A Security System, Types Of Systems, Forms Of Remote Station Communications, And Common Defects Found In Security Systems. Participants: Insurance Company Professionals, Law Enforcement And Fire Personnel.
- May 2016, Instructor, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, Metrotech Center, JP Morgan Chase, Brooklyn, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures.
- May 2016, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2016 License Renewal, Carbon Monoxide Design & Installation, Tenafly, New Jersey. Topics: Topics: Detection And Annunciation Of The Presence Of Carbon Monoxide, Evacuation Of Premises, Notification Of Authorities, UL Standards For Carbon Monoxide Sensors, UL 2034, UL 2075, Detection Principles Of Carbon Monoxide Sensors, Causes Of Carbon Monoxide, Equipment Manufacturer's Specifications, Detection Thresholds For Alarm Activation In Parts Per Million (PPM), Exposure Affects, Installation And Testing, Location And Placement Of Carbon Monoxide Sensors, Minimum Standards For The Installation Of Carbon Monoxide Sensors In Protected Premises, Functional And Exposure Testing Of Carbon Monoxide Sensors, Functional And Reliable Life Expectancy Of Carbon Monoxide Sensors And Circuit, Power, And Initiating Device Supervision And Annunciation. Participants: New Jersey Burglar And/Or Fire Alarm License Holders And NICET Certified Alarm Technicians.
- May 2016, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2016 License Renewal, Designing Fire Alarm Systems, Tenafly, New Jersey. Topics: Fire Alarm System Design Fundamentals, Overview Of Fire Alarm Systems, Codes And Standards Applicable To Fire Alarm System Design, Initiating Devices, Notification Appliances, Suppression Supervisory Equipment, Integration With Other Building Systems, Integration With Other Building Systems, Fire Alarm Control Unit (FACU), The Input-Output Matrix, UL, Detector Types, Detector Selection, Detection System Cost, Predominant Application, Detection Speed, Fire Alarm Control Units, Fire Alarm Power Supplies, Photoelectronic Smoke Detector, Ionization Smoke Detection, Heat Detectors, Visual Alarms, Wiring Types,

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Case Studies, And Fire Alarm System Science, Industry Standards, Recognized Practices And Standards Of The Technical Community Of The Fire Alarm Industry. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.

- April 2016, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2016 License Renewal, Residential Security & Fire Alarm Systems, Tenaflly, New Jersey. Topics: Detection, Deterrence, Annunciation And Notification, Minimization Of Loss, Proper Recommendation, Application, Installation, Service, Maintenance And Monitoring Of Residential Security And Fire Alarm Systems, Existing Residential Security And Fire Alarm Systems, Equipment Manufacturer's Specifications, Applicable UL Standards, NFPA Standards And Nationally Recognized Industry Standards And Practices, UL 1023, UL 985, Low Temperature And Water Leak Detection Systems, VOIP Dangers, Testing and Completion, Detection Principles, Meeting Minimum Standards, Initiating Devices, Inherent Safeguards, Perimeter Vs. Motion Detection, Partial Perimeter Vs. Full Perimeter, Stay Shunting, Contacts Only, Hardwired, Wireless And Hybrid Systems, Telephone Line Security Options, Smoke Detection, Heat Detection, Carbon Monoxide Detection, Gas Detection, Exceeding Code Requirements, Supplemental Issues With Residential Fire And Code Restrictions With System Detectors And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders And NICET Certified Alarm Technicians.
- April 2016, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2016 License Renewal, Burglar Alarm System Testing Inspection And Maintenance, Tenaflly, New Jersey. Topics: For The Burglar Alarm System Testing Inspection And Maintenance Course: Identifying Defects And/Or Damaged Equipment, Repairing And/Or Replacing Defective And/Or Damaged Equipment, Identifying Changes In The Protected Premises That Can Affect Burglar Alarm System Performance And Reliability, Identifying System Defects And Irregularities And Providing Corrective Action Plans, Minimum Standards Relating To Testing Of Burglar Alarm Systems, Functional Testing Of Initiating Devices, Documents Findings, Minimum Standards Relating To Inspection Of Burglar Alarm Systems, Utilizing Photography And/Or Videotaping In Burglar Alarm System Inspections, Documentation Findings And Appropriately Notifying Subscribers, Minimum Standards Relating To Maintaining Burglar Alarm Systems, Outdated Technologies, What To Do When The System Cannot Be Replaced With Like, Kind, And Quality Equipment, What To Do When The System Cannot Be Repaired And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders And NICET Certified Alarm Technicians.
- April 2016, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2016 License Renewal, Alarm Science, Tenaflly, New Jersey. Topics: Analysis And Technical Overview Of Alarm Science, Equipment Manufacturer's Specifications, UL Standards And Nationally Recognized Industry Standards And Practices, Duties Of An Alarm Contractor, The 25 Principles Of Alarm Science, Identification Of Defects And Irregularities In Alarm System Design, Application, Installation, Programming, Service, Inspection, Maintenance, Testing, And Monitoring, Existing Systems, Takeovers, Liability, Policies, Procedures, Customs And Habits And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders And NICET Certified Alarm Technicians.
- April 2016, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2016 License Renewal, Smoke Detectors-The Science Of Automatic Detection, Tenaflly, New Jersey. Topics: Fire Science, Smoke Detector Operations And Functionality, Hardwired And Wireless Smoke Detectors, The Visible And Invisible Particles Of Combustion: Understanding The Micron, Smoldering Fires Vs. Fast Flaming Fires, Environmental Limitations Of Smoke Detectors, Technical Limitations Of Smoke Detectors, The Four Stages Of A Fire, Obscuration, Stratification, Equipment Manufacturers Specifications, NFPA, Codes And Standards, Quantifying The Reliability Of Smoke Detectors, UL Standard 217, UL Standard 268, UL Standard 985, UL Standard 864, NFPA 72® The National Fire Alarm Code®, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction (AHJ), International Residential Code (IRC), To Intentionally Exceed Fire Code Requirements Or Not, The Functional And Reliable Life Expectancy

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Of Smoke Detectors, Placement And Spacing, Different Types Of Smoke Detectors And Smoke Detection Systems, Two-Wire Smoke Detectors, Cross Listing Compatibility, Four Wire Smoke Detectors, Beam Detectors, Duct Detectors, Conventional Smoke Detection Systems, Addressable Smoke Detection Systems, Analog Addressable Smoke Detection Systems, Types Of Smoke Detection Coverage, Emerging Smoke Detection Technologies, Inspection, Testing And Maintenance Of Smoke Detectors, The Proper Methodology For Testing, Inspection And Maintenance, Identification Of Defects And Irregularities In Design, Recommendation, Application, Installation, Placement, Testing, Inspection, Maintenance, Repair And Monitoring Of Smoke Detectors, Functional Vs. Sensitivity Testing, Inherent Safeguards, Power Supervision Relays, End Of Line Resistor Supervision, Dangers And Hazards, Remote Momentary Of Toggle Reset Switch, T-Tapping, Special Applications Where Smoke Detectors Shall Be Installed And/Or Where The Occupancy Is Intrinsically Safe And Case Studies Where Fire Alarm Systems Failed And The Reasons Why. Participants: New Jersey Burglar And/Or Fire Alarm License Holders And NICET Certified Alarm Technicians.

- April 2016, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2016 License Renewal, Fire Alarm, Burglar Alarm And Locksmith Laws And Regulations, Tenafly, New Jersey. Topics: General Provisions Regarding Licensing Of Alarm And Locksmith Businesses, Locksmith Licensure Regulations, And Burglar Alarm And Fire Alarm License Requirements. Participants: New Jersey Certified And Licensed Alarm Contractors And NICET Certified Alarm Technicians.
- March 2016, Keynote Speaker, When Bad Things Happen To Alarm Companies...The Forensic Science Of Minimizing Risk, Connecticut Alarm And Systems Integrators Association (CASIA), Hamden, Connecticut.
- December 2015, Instructor, Extreme Alarm Science Boot Camp™, John Jay College Of Criminal Justice, The City University of New York, Center For Protection And Safety, Manhattan, New York, Sponsored By John Jay College Of Criminal Justice, Chairman And Professor Charles P. Nemeth, JD, PhD, LL.M Of The Security, Fire And Emergency Management Department, And Professor Of Security Management, Robert D. McCrie, PhD, CPP, Department Of Law, Police Science & Criminal Justice Administration, John Jay College Of Criminal Justice, New York, New York. *Advanced Education Level Course*. Topics: The Security Survey, Needs Analysis, Central Station Duration, Frequency And Location Methodology In Making The Security System A Capable Guardian, The Routine Activity Approach Theory, Three Minimal Elements Of The Routine Activity Approach, Target Hardening, Crime Prevention Through Environmental Design (CPTED, Critical Detection Point (CDP), Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards, And Practices, Telephone Line Security Methodologies, Security System Reliability, The Crime Triangle, Cover,t And Overt Video Surveillance Systems, Verified Video, And Sonitrol Systems Using A Security System As A Capable Guardian, Quantifying Early Warning Detection To A Security Systems Effectiveness, The Criticality Of Central Station Notification To A Security Systems Effectiveness, Eleven Principles That Make Security System's Effective And Reliable Circumvention Techniques Utilized By The Criminal Element, One And Two Way Radios, Interfacing Physical Security And Electronic Security, Forensic Case Studies, Indicators Of Fraud In Forensic Investigations, Are Security Systems Circumvented By The Criminal Element?, Are Security Systems Failing Due To Other Reasons?, Scientifically Examining Alarm System Failures And The Improper Methodologies Utilized, Foreseeability, Detectability, And Preventability, System Reliability- Mission Critical, Life Safety Detection Systems- Smoke, Heat And Carbon Monoxide Sensors, Early Warning, And Duty, One Size Fits All Approach Methodologies, Panic And Holdup Systems, Intrusion Detection Systems, Layers Of Detection And Protection, Concentric Circles Of Detection And Protection, UL Listed Safe Ratings, And The Theories Of Breach Of Duty, Proximate Cause, And Damages.

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- November 2015, Executive Guest Lecturer, The Forensic Expert, MADS 6639¹⁷, Fairleigh Dickinson University, Teaneck, New Jersey. Topics: Alarm And Security Science, The Crime Triangle, The Routine Activity Approach Theory, Elements That Make Security Systems Effective And Reliable, Duration, Frequency And Methodology, Crime Prevention Through Environmental Design (CPTED), Critical Detection Points (CDP), Duty, Breach Of Duty, Proximate Cause Damages, Foreseeability, Detectability, Preventability, Security Surveys, Needs Analysis, And Case Studies. Participants: Undergraduate And Graduate Students Of Fairleigh Dickinson University. Topics: The Security Survey, Needs Analysis, Central Station Duration, Frequency And Location Methodology In Making The Security System A Capable Guardian, The Routine Activity Approach Theory, Three Minimal Elements Of The Routine Activity Approach, Target Hardening, Crime Prevention Through Environmental Design (CPTED), Critical Detection Point (CDP), Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards, And Practices, Telephone Line Security Methodologies, Security System Reliability, The Crime Triangle, Cover, And Overt Video Surveillance Systems, Verified Video, And Sonitrol Systems Using A Security System As A Capable Guardian, Quantifying Early Warning Detection To A Security Systems Effectiveness, The Criticality Of Central Station Notification To A Security Systems Effectiveness, Eleven Principles That Make Security System's Effective And Reliable, Circumvention Techniques Utilized By The Criminal Element, One And Two Way Radios, Interfacing Physical Security And Electronic Security, Forensic Case Studies, Indicators Of Fraud In Forensic Investigations, Are Security Systems Circumvented By The Criminal Element?, Are Security Systems Failing Due To Other Reasons?, Scientifically Examining Alarm System Failures And The Improper Methodologies Utilized, Foreseeability, Detectability, And Preventability, System Reliability- Mission Critical, Life Safety Detection Systems- Smoke, Heat And Carbon Monoxide Sensors, Early Warning, And Duty, One Size Fits All Approach Methodologies, Panic And Holdup Systems, Intrusion Detection Systems, Layers Of Detection And Protection, Concentric Circles Of Detection And Protection, UL Listed Safe Ratings, And The Theories Of Breach Of Duty, Proximate Cause, And Damages.
- September 2015, Instructor, How Secure are Your Security Systems? ASIS International 61st Annual Seminar and Exhibits¹⁸, Evolve2Advance¹⁹, Anaheim, California. *Advanced Education Level Course*. Topics: Three Minimal Elements Of The Routine Activity Approach Theory, A Security System Is A Capable Guardian, If We Decrease The Opportunity Will Crime Rates Go Down?, Are Security Systems Helpful In Hardening The Target To Reduce Crimes?, Fifteen Elements That Make Security Systems Effective and Reliable, Fifteen Elements That Make Security Systems Effective And Reliable, Critical Detection Point, Foreseeability, Detectability, Preventability, What Is A Security System?, What Is The Purpose Of A Needs Analysis?, What Is A One Way Radio?-What Are The Advantages And Disadvantages, What Is A Two Way Radio?-What Are the Advantages And Disadvantages, PPF, CFC, Data-Bus, FHSS, GSM, GPRS, CDMA & HSPA Technologies And End To End Coupler Cord. Participants: Security Experts, Law Enforcement, Certified Protection Professionals, Security Directors, Loss Prevention Experts, Physical Security Professionals, And Certified Professional Investigators.
- September 2015, Instructor, When Bad Things Happen To Alarm Companies.....The Forensic Science Of Minimizing Risk, New Jersey Electronic Security Association (NJESA) Central Membership Meeting, Hazlet, New Jersey. Topics: Are Security Systems Helpful In Hardening The Target To Reduce Crimes?, Are Security Systems Being Circumvented By The Criminal Element, Are Security Systems Failing Due To Other Causes?, The Crime Triangle, How Important Is Early Warning To A Fire Alarm System's Effectiveness?, How Important Is Police Or Fire Department Response To A Security System's Effectiveness?, And Educating The

¹⁷ This course was held in conjunction with Dr. Eamon P. Doherty, Ph.D., CCE, CPP, who is the associate professor of the Cybercrime Training Lab Director, Petrocelli College of Continuing Studies at Fairleigh Dickinson University.

¹⁸ ASIS International (ASIS) founded in 1955 is a leading organization for security professionals worldwide.

¹⁹ Notably, the attendance at this International Seminar Event was estimated at 20,000 security professionals.

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Customer. Participants: New Jersey Certified And Licensed Alarm Contractors, Central Station Representatives, Equipment Manufacturers, And Alarm Technicians.

- August 2015, Instructor, Central and Remote Station Monitoring Instructions-Are Your Instructions Safe or Foreseeably Dangerous?, Webinar, Hosted By Kirschenbaum & Kirschenbaum, P.C., Participants: Alarm Technicians, Fire Alarm Technicians, NICET Certified Fire Alarm Technicians, Sales Professionals, Authorities Having Jurisdiction, Alarm Company Senior Management, Central Station Management And Consultants.
- July 2015, Instructor, Residential Fire Alarm Systems-Life Safety Or Fatal Flaws, Webinar, Hosted By Kirschenbaum & Kirschenbaum, P.C., Participants: Alarm Technicians, Fire Alarm Technicians, NICET Certified Fire Alarm Technicians, Sales Professionals, Authorities Having Jurisdiction, Alarm Company Senior Management, Central Station Management And Consultants.
- July 2015, Instructor, Forensic Alarm Expert's Perspective On Alarm Company Liability: Case Studies and Ways To Help Minimize Your Liability, Webinar, Hosted By Kirschenbaum & Kirschenbaum, P.C., Participants: Alarm Technicians, Fire Alarm Technicians, NICET Certified Fire Alarm Technicians, Sales Professionals, Authorities Having Jurisdiction, Alarm Company Senior Management, Central Station Management And Consultants.
- July 2015, Instructor, Connect To Existing System Installed By Others; What Are Your Duties? & Ambush, Panic and Hold-Up Systems-The Customer's Lifeline to Safety and Security or Not?, Webinar Hosted By Kirschenbaum & Kirschenbaum, P.C., Participants: Alarm Technicians, Fire Alarm Technicians, NICET Certified Fire Alarm Technicians, Sales Professionals, Authorities Having Jurisdiction, Alarm Company Senior Management, Central Station Management And Consultants.
- June 2015, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2016 License Renewal, Barrier Free Subcode, Lawrenceville, New Jersey. Topics: 5:23-7.1 Applicability, 5:23-7.2 Accessibility Standard, 5:23-7.4 Non-Residential Buildings And Buildings Of Use Group R-1, 5:23-7.5 Residential Buildings Other Than Group R-1, 5:23-7.11 Requirements Applicable To Specific Non-Residential Groups And Group R-1, 5:23-7.12 Requirements Applicable To All Non-Residential Groups, Including Spaces Other Than Guestrooms In Use Group R-1 And 5:23-7.13 Existing Facilities. New Jersey Uniform Construction Code, Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections.
- June 2015, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2016 License Renewal, Americans With Disabilities Act (ADA), Lawrenceville, New Jersey. Topics: Americans With Disabilities ACT (ADA) Requirements And NFPA 72®, ADA Accessibility Guidelines For Building And Facilities (ADAAG), ADAAG In Comparison To DOJ Standards For Accessible Design And The International Building Code, Manual Pull Stations, Audible Warning Devices: Horns & Speakers, Visual Warning Devices: Strobe Lights, Activating A Manual Fire Alarm Box.
- June 2015, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For the 2016 License Renewal, Industrial Safety: NFPA 70E: Electrical Safety In The Workplace, Lawrenceville, New Jersey. Topics: Analysis And Technical Overview, Understanding And Applying The National Electrical Code In All Types Of Burglar, Fire Alarm And CCTV System Installations, Wiring Methods And Materials, Equipment For General Use, Special Occupancies, Divisions 1 And 2, Class I Locations, Class II Locations, Class III Locations, Intrinsically Safe Systems, NEC Tables, Article 725 Class 1, Class 2, And Class 3 Remote Control, Signaling, And Power Limited Circuits, Article 760: Fire Alarm Systems, Non-Power Limited Fire Alarms (NPLFA) Circuits, Power-Limited Fire Alarm (PLFA) Circuits, Optical Fiber Cables And Raceways, Overcurrent Protection, Location, Enclosures, Disconnecting, Grounding, Circuit And System Grounding, Grounding Electrode System And Electric Conductors, Enclosure, Raceway And Service Cable Grounding, Equipment Grounding, Methods Of Equipment Grounding, Direct Current

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Systems, Instruments, Meters And Relays, Surge Arrestors, Connecting Surge Arrestors, Ensuring NEC Compliance When Installing Burglar, Fire Alarm, And CCTV Systems, Common Errors In NEC Compliance And Checklists For Identification Of NEC Errors.

- June 2015, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2016 License Renewal, New Jersey Uniform Construction Code, Lawrenceville, New Jersey. Topics: Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections, 5:23-2.21 Construction Control, 5:23-2.23 Certificate Requirements, Subchapter 3: Subcodes, 5:23-3.6: Standards; Accepted Practice, 5:23-3.8 Products Violating The Code, Subchapter 5: Licensing, 5:23-5.3 Types Of Licenses, Subchapter 6: Rehabilitation Subcode, 5:23-6.2 Applicability And Compliance, 5:23-6.3 Definitions, 5:23-6.4 Repairs, 5:23-6.5 Renovations, 5:23-6.6 Alterations, 5:23-6.7 Reconstruction, And 5:23-6.8 Materials And Method.
- June 2015, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2016 License Renewal, Smoke Detectors-The Science Of Automatic Detection, Hackensack, New Jersey. Topics: Fire Science, Smoke Detector Operations And Functionality, Hardwired And Wireless Smoke Detectors, The Visible And Invisible Particles Of Combustion: Understanding The Micron, Smoldering Fires Vs. Fast Flaming Fires, Environmental Limitations Of Smoke Detectors, Technical Limitations Of Smoke Detectors, The Four Stages Of A Fire, Obscuration, Stratification, Equipment Manufacturers Specifications, NFPA, Codes And Standards, Quantifying The Reliability Of Smoke Detectors, UL Standard 217, UL Standard 268, UL Standard 985, UL Standard 864, NFPA 72® The National Fire Alarm Code®, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction (AHJ), International Residential Code (IRC), To Intentionally Exceed Fire Code Requirements Or Not, The Functional And Reliable Life Expectancy Of Smoke Detectors, Placement And Spacing, Different Types Of Smoke Detectors And Smoke Detection Systems, Two-Wire Smoke Detectors, Cross Listing Compatibility, Four Wire Smoke Detectors, Beam Detectors, Duct Detectors, Conventional Smoke Detection Systems, Addressable Smoke Detection Systems, Analog Addressable Smoke Detection Systems, Types Of Smoke Detection Coverage, Emerging Smoke Detection Technologies, Inspection, Testing And Maintenance Of Smoke Detectors, The Proper Methodology For Testing, Inspection And Maintenance, Identification Of Defects And Irregularities In Design, Recommendation, Application, Installation, Placement, Testing, Inspection, Maintenance, Repair And Monitoring Of Smoke Detectors, Functional Vs. Sensitivity Testing, Inherent Safeguards, Power Supervision Relays, End Of Line Resistor Supervision, Dangers And Hazards, Remote Momentary Of Toggle Reset Switch, T-Tapping, Special Applications Where Smoke Detectors Shall Be Installed And/Or Where The Occupancy Is Intrinsically Safe And Case Studies Where Fire Alarm Systems Failed And The Reasons Why.
- June 2015, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For the 2016 License Renewal, New Jersey Laws and Rules Governing the Provision of Burglar Alarm, Fire Alarm, and Locksmithing Services, Hackensack, New Jersey. Topics: Definitions of Services, Common Exemptions From Licensing, Central Monitoring Stations License Requirements, Continuing Education Requirements, Advertisement Guidelines, Individual and Business Firm Licensing Requirements, Applications, Business Firm Qualifiers, Supervision Of Licensed And Unlicensed Employees, Standards Of Practice And Prohibited Practices and Acts, The Home Improvement Contractors Act, Contractor's Registration Act, And The Home Improvement Practice Regulations.
- June 2015, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For the 2016 License Renewal, Industrial Safety: NFPA 70E: Electrical Safety In The Workplace, Hackensack, New Jersey. Topics: Analysis And Technical Overview, Understanding And Applying The National Electrical Code In All Types Of Burglar, Fire Alarm And CCTV System Installations, Wiring Methods And Materials, Equipment For General Use, Special Occupancies, Divisions 1 And 2, Class I

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Locations, Class II Locations, Class III Locations, Intrinsically Safe Systems, NEC Tables, Article 725 Class 1, Class 2, And Class 3 Remote Control, Signaling, And Power Limited Circuits, Article 760: Fire Alarm Systems, Non-Power Limited Fire Alarms (NPLFA) Circuits, Power-Limited Fire Alarm (PLFA) Circuits, Optical Fiber Cables And Raceways, Overcurrent Protection, Location, Enclosures, Disconnecting, Grounding, Circuit And System Grounding, Grounding Electrode System And Electric Conductors, Enclosure, Raceway And Service Cable Grounding, Equipment Grounding, Methods Of Equipment Grounding, Direct Current Systems, Instruments, Meters And Relays, Surge Arrestors, Connecting Surge Arrestors, Ensuring NEC Compliance When Installing Burglar, Fire Alarm, And CCTV Systems, Common Errors In NEC Compliance And Checklists For Identification Of NEC Errors.

- June 2015, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2016 License Renewal, Americans With Disabilities Act (ADA), Hackensack, New Jersey. Topics: Americans With Disabilities ACT (ADA) Requirements And NFPA 72®, ADA Accessibility Guidelines For Building And Facilities (ADAAG), ADAAG In Comparison To DOJ Standards For Accessible Design And The International Building Code, Manual Pull Stations, Audible Warning Devices: Horns & Speakers, Visual Warning Devices: Strobe Lights, Activating A Manual Fire Alarm Box.
- June 2015, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2016 License Renewal, New Jersey Uniform Construction Code, Hackensack, New Jersey. Topics: Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections, 5:23-2.21 Construction Control, 5:23-2.23 Certificate Requirements, Subchapter 3: Subcodes, 5:23-3.6: Standards; Accepted Practice, 5:23-3.8 Products Violating The Code, Subchapter 5: Licensing, 5:23-5.3 Types Of Licenses, Subchapter 6: Rehabilitation Subcode, 5:23-6.2 Applicability And Compliance, 5:23-6.3 Definitions, 5:23-6.4 Repairs, 5:23-6.5 Renovations, 5:23-6.6 Alterations, 5:23-6.7 Reconstruction, And 5:23-6.8 Materials And Method.
- June 2015, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2016 License Renewal, Barrier Free Subcode, Hackensack, New Jersey. Topics: Topics: 5:23-7.1 Applicability, 5:23-7.2 Accessibility Standard, 5:23-7.4 Non-Residential Buildings And Buildings Of Use Group R-1, 5:23-7.5 Residential Buildings Other Than Group R-1, 5:23-7.11 Requirements Applicable To Specific Non-Residential Groups And Group R-1, 5:23-7.12 Requirements Applicable To All Non-Residential Groups, Including Spaces Other Than Guestrooms In Use Group R-1 And 5:23-7.13 Existing Facilities. New Jersey Uniform Construction Code, Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections.
- June 2015, Instructor, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, Metrotech Center, JP Morgan Chase, Brooklyn, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And

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Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures.

- May 2015, Instructor, 2015 Pennsylvania Burglar And Fire Alarm Association (PBFAA) Annual Expo, Valley Forge, Pennsylvania.
- May 2015, Instructor, 2015 International Association of Arson Investigators, Inc. (IAAI) 66th International Training Conference, The Forensic Analysis of Alarm Systems, Rosemont, Illinois.
- February 2015, Instructor, New Jersey Electronic Security Association (NJESA) 2015 Annual Symposium, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2016 License Renewal, Smoke Detectors-The Science Of Automatic Detection, Atlantic City, New Jersey. Topics: Fire Science, Smoke Detector Operations And Functionality, Hardwired And Wireless Smoke Detectors, The Visible And Invisible Particles Of Combustion: Understanding The Micron, Smoldering Fires Vs. Fast Flaming Fires, Environmental Limitations Of Smoke Detectors, Technical Limitations Of Smoke Detectors, The Four Stages Of A Fire, Obscuration, Stratification, Equipment Manufacturers Specifications, NFPA, Codes And Standards, Quantifying The Reliability Of Smoke Detectors, UL Standard 217, UL Standard 268, UL Standard 985, UL Standard 864, NFPA 72® The National Fire Alarm Code®, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction (AHJ), International Residential Code (IRC), To Intentionally Exceed Fire Code Requirements Or Not, The Functional And Reliable Life Expectancy Of Smoke Detectors, Placement And Spacing, Different Types Of Smoke Detectors And Smoke Detection Systems, Two-Wire Smoke Detectors, Cross Listing Compatibility, Four Wire Smoke Detectors, Beam Detectors, Duct Detectors, Conventional Smoke Detection Systems, Addressable Smoke Detection Systems, Analog Addressable Smoke Detection Systems, Types Of Smoke Detection Coverage, Emerging Smoke Detection Technologies, Inspection, Testing And Maintenance Of Smoke Detectors, The Proper Methodology For Testing, Inspection And Maintenance, Identification Of Defects And Irregularities In Design, Recommendation, Application, Installation, Placement, Testing, Inspection, Maintenance, Repair And Monitoring Of Smoke Detectors, Functional Vs. Sensitivity Testing, Inherent Safeguards, Power Supervision Relays, End Of Line Resistor Supervision, Dangers And Hazards, Remote Momentary Of Toggle Reset Switch, T-Tapping, Special Applications Where Smoke Detectors Shall Be Installed And/Or Where The Occupancy Is Intrinsically Safe And Case Studies Where Fire Alarm Systems Failed And The Reasons Why.
- January 2015, Instructor, ASIS Western New Jersey Chapter 088 Monthly Meeting, Methodologies Utilized By The Criminal Element To Circumvent Alarm Systems And Electronic Counter-Measures, Florham Park, New Jersey.
- November 2014, Instructor, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, Metrotech Center, JP Morgan Chase, Brooklyn, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures. Participants: Police Officers From The 25th, 26th, 45th, 61st, 67th, 70th, 71st, 72nd, 79th, 81st, 83rd, 90th, 94th, 100th, 109th, 114th, 120th, 121st And 122nd Precincts, Representatives From Transit Districts 11, 30, 34, Police Service Area Community Affairs Officers,

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Special Police Officers From Hostos Community College-CUNY, Special Agents From the FBI And Joint Terrorism Task Force, Detectives From The NYPD And Joint Terrorism Task Force.

- November 2014, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2016 License Renewal, Fire Alarm, Burglar Alarm And Locksmith Laws And Regulations, Hackensack, New Jersey. Topics: General Provisions Regarding Licensing Of Alarm And Locksmith Businesses, Locksmith Licensure Regulations, And Burglar Alarm And Fire Alarm License Requirements. Participants: New Jersey Certified And Licensed Alarm Contractors And NICET Certified Alarm Technicians.
- October 2014, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2016 License Renewal, Barrier Free Subcode, Hackensack, New Jersey. Topics: Topics: 5:23-7.1 Applicability, 5:23-7.2 Accessibility Standard, 5:23-7.4 Non-Residential Buildings And Buildings Of Use Group R-1, 5:23-7.5 Residential Buildings Other Than Group R-1, 5:23-7.11 Requirements Applicable To Specific Non-Residential Groups And Group R-1, 5:23-7.12 Requirements Applicable To All Non-Residential Groups, Including Spaces Other Than Guestrooms In Use Group R-1 And 5:23-7.13 Existing Facilities. New Jersey Uniform Construction Code, Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections. Participants: New Jersey Certified And Licensed Alarm Contractors And NICET Certified Alarm Technicians.
- October 2014, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2016 License Renewal, Americans With Disabilities Act (ADA), Hackensack, New Jersey. Topics: Americans With Disabilities ACT (ADA) Requirements And NFPA 72®, ADA Accessibility Guidelines For Building And Facilities (ADAAG), ADAAG In Comparison To DOJ Standards For Accessible Design And The International Building Code, Manual Pull Stations, Audible Warning Devices: Horns & Speakers, Visual Warning Devices: Strobe Lights, Activating A Manual Fire Alarm Box. Participants: New Jersey Certified And Licensed Alarm Contractors And NICET Certified Alarm Technicians.
- October 2014, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2016 License Renewal, New Jersey Uniform Construction Code, Hackensack, New Jersey. Topics: Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections, 5:23-2.21 Construction Control, 5:23-2.23 Certificate Requirements, Subchapter 3: Subcodes, 5:23-3.6: Standards; Accepted Practice, 5:23-3.8 Products Violating The Code, Subchapter 5: Licensing, 5:23-5.3 Types Of Licenses, Subchapter 6: Rehabilitation Subcode, 5:23-6.2 Applicability And Compliance, 5:23-6.3 Definitions, 5:23-6.4 Repairs, 5:23-6.5 Renovations, 5:23-6.6 Alterations, 5:23-6.7 Reconstruction, And 5:23-6.8 Materials And Method, Requirements, And Emergency Call Systems: Supervised Sprinkler Systems. 5:23-2.21 Construction Control, 5:23-2.23 Certificate Requirements, Subchapter 3: Subcodes, 5:23-3.6: Standards; Accepted Practice, 5:23-3.8 Products Violating The Code, Subchapter 5: Licensing, 5:23-5.3 Types Of Licenses, Subchapter 6: Rehabilitation Subcode, 5:23-6.2 Applicability And Compliance, 5:23-6.3 Definitions, 5:23-6.4 Repairs, 5:23-6.5 Renovations, 5:23-6.6 Alterations, 5:23-6.7 Reconstruction, And 5:23-6.8 Materials And Method. Participants: New Jersey Certified And Licensed Alarm Contractors And NICET Certified Alarm Technicians.
- October 2014, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For the 2016 License Renewal, Industrial Safety: NFPA 70E: Electrical Safety In The Workplace, Teaneck, New Jersey. Topics: Analysis And Technical Overview, Understanding And Applying The National Electrical Code In All Types Of Burglar, Fire Alarm And CCTV System Installations, Wiring Methods And Materials, Equipment For General Use, Special Occupancies, Divisions 1 And 2, Class I

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Locations, Class II Locations, Class III Locations, Intrinsically Safe Systems, NEC Tables, Article 725 Class 1, Class 2, And Class 3 Remote Control, Signaling, And Power Limited Circuits, Article 760: Fire Alarm Systems, Non-Power Limited Fire Alarms (NPLFA) Circuits, Power-Limited Fire Alarm (PLFA) Circuits, Optical Fiber Cables And Raceways, Overcurrent Protection, Location, Enclosures, Disconnecting, Grounding, Circuit And System Grounding, Grounding Electrode System And Electric Conductors, Enclosure, Raceway And Service Cable Grounding, Equipment Grounding, Methods Of Equipment Grounding, Direct Current Systems, Instruments, Meters And Relays, Surge Arrestors, Connecting Surge Arrestors, Ensuring NEC Compliance When Installing Burglar, Fire Alarm, And CCTV Systems, Common Errors In NEC Compliance And Checklists For Identification Of NEC Errors. Participants: New Jersey Burglar And/Or Fire Alarm License Holders, New Jersey Certified And Licensed Alarm Contractors And NICET Certified Alarm Technicians.

- October, 2014, Guest Speaker, Metropolitan Burglar And Fire Alarm Association (MBFAA) General Meeting, Forensic Alarm Science, Bayside, Queens. Topics: Marketing, Liability, Or Minimization Of Liability, System Design and Methodologies, Inherent Safeguards, Anatomy Of A Lawsuit, Case Studies, Existing Systems, FPA Standards, Forensic Analysis, Alarm Contractor Duties, What The Alarm Industry Says., Alarm Science Or Junk Science, Key Facts, Questions Regarding Your Operations, What Action To Take If Your Alarm Company Is Sued, And Theories Of Legal Liability. Participants: Certified and Licensed New York State Alarm Contractors, CCTV System Contractors, President Of The MBFAA And Executive Director Of The Metropolitan Burglar And Fire Alarm Association, New York State Certified Alarm Instructors, Certified Protection Professional (CPP) And Physical Security Professional (PSP) From Microsoft, Attorney Ken Kirschenbaum, Lawyers Of Kirschenbaum And Kirschenbaum, Equipment Manufacturers And Alarm And CCTV Distributors.
- September 2014, Conference Instructor, New York State Electronic Security Association (NYSESA) Annual Conference, When Bad Things Happen To Alarm Companies...The Forensic Science Of Minimizing Risk, Ellenville, New York. Topics: Are Security Systems Helpful In Hardening The Target To Reduce Crimes?, Are Security Systems Being Circumvented By The Criminal Element, Are Security Systems Failing Due To Other Causes?, The Crime Triangle, How Important Is Early Warning To A Fire Alarm System's Effectiveness?, How Important Is Police Or Fire Department Response To A Security System's Effectiveness?, And Educating The Customer. Participants: New York, New Jersey And Pennsylvania Alarm Contractors, NICET Certified Technicians, Board Members Of The NYSESA, New Jersey Alarm Association And Pennsylvania Burglar And Fire Alarm Association (PBFAA), Equipment Manufacturers Representative, Security Company Consultants, Authorities Having Jurisdiction, And Executive Director Of The Pennsylvania Burglar & Fire Alarm Association (PBFAA).
- May 2014, Instructor, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, Metrotech Center, JP Morgan Chase, Brooklyn, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures.

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- May 2014, Speaker, New Jersey Municipal Electrical Inspectors Association Of New Jersey (MEIA) Meeting, Lyndhurst, New Jersey.
- November 2013, Speaker²⁰, Expert Witness, Honeywell Connect 2013²¹, Los Angeles, California. Topics: Protecting Your Company Requires More Than Well Written Contracts And Clauses! Learn From Jeffrey Zwirn, CPP, CFPS, CFE, DABFET, CHS-III, SET, CCI, President of IDS Research & Development, Incorporated, A Nationally Recognized Forensic Alarm And Security Expert Witness, On Advanced Methodologies And Practices To Help Minimize Your Company's Liability. You'll Hear How To Avoid Lawsuits That Result In Large Award Settlements Because Of System Design, Installation And Even Clerical Mistakes Made By Employees Or Sub-Contractors. This Session Is Sponsored By Security America Risk Retention Group, An Industry Owned General Liability With Errors And Omissions Insurance Provider. Participants: Representatives From Honeywell's Three Largest Dealer Organizations-First Alert Professional (FAP), Commercial Security Systems (CSS), And Honeywell Integrated Security (HIS), Mr. Greg McLochlin, Director, Dealer Development Group, Authorized Dealer Programs, Honeywell Security Products America, Mr. John Knox, Current President Of Electronic Security Association (ESA), Mr. Mike Miller, Former President Of Electronic Security Association (ESA), Mr. Bart Didden, Former President Of The Electronic Security Association (ESA) And President Of USA Central Station Alarm Association, And Mr. Marshall Marinace, Vice President Of The Electronic Security Association.
- June 2013, Executive Guest Lecturer, The Forensic Expert, MADS 6639²², Fairleigh Dickinson University, Teaneck, New Jersey. Topics: Alarm And Security Science, The Crime Triangle, The Routine Activity Approach Theory, Elements That Make Security Systems Effective And Reliable, Duration, Frequency And Methodology, Crime Prevention Through Environmental Design (CPTED), Critical Detection Points (CDP), Duty, Breach Of Duty, Proximate Cause Damages, Foreseeability, Detectability, Preventability, Security Surveys, Needs Analysis, And Case Studies. Participants: Undergraduate And Graduate Students Of Fairleigh Dickinson University.
- May 2013, Guest Speaker, North Jersey American Society Of Certified Engineering Technicians (ASCET) Meeting, Case Studies Of Alarm Liability, Middlesex, New Jersey. Topics: Case Studies, Duties Of An Alarm Contractor, The Security Survey, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Security System Design, Application, Recommendations, Sales, Installation, Service, Testing, Maintenance, Inspections And Monitoring, Types Of Line And Wireless Based Telephone Line Security Technologies, Fire Alarm Systems, Life Safety Systems, Fire Alarm Science, Obscuration And Stratification, Carbon Monoxide Systems, Installation Policies And Procedures, Central Station Monitoring Policies And Procedures, Connect To Existing Systems And Takeovers, And Training And Supervision. Participants: Members Of American Society Of Certified Engineering Technicians (ASCET).
- May 2013, Instructor, New Jersey Division of Consumer Affairs Approved Courses for Continuing Education Credits For The 2013 License Renewal, Recessed Contacts: Aesthetically Pleasing Or The New Liability,

²⁰ *Educational Sessions: Whether your goal is to learn about industry trends, business strategies, or selling techniques, education is a key reason for attending Connect 2013. This year we have a line-up of breakout sessions that is better than ever! We've recruited industry experts and dealers from around the country to present on topics that you've told us are critical to your business.* Connect 2013 Website.

²¹ Honeywell's largest-ever gathering of its authorized dealers. A three-day conference featuring 40 educational sessions, which will be presented by Honeywell technology experts, dealers and enterprise-level integrators. "Arming our authorized dealers and integrators with the knowledge to better position themselves for the future of the security industry is a very serious undertaking," Marek Robinson, president of Honeywell Security Products America's Authorized Dealer Groups, said in a statement. "What better way to do that than by engaging industry experts and hearing from industry peers?"

²² This course was held in conjunction with Dr. Eamon P. Doherty, Ph.D., CCE, CPP, who is the associate professor of the Cybercrime Training Lab Director, Petrocelli College of Continuing Studies at Fairleigh Dickinson University.

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Hackensack, New Jersey. Topics: Identifying Liability Concerns When Installing Recessed Contracts, Window And Door Manufacturer's Warranties, Installing Recessed Contracts In Door Or Windows Voids The Manufacturer's Warranty, Alternative Methodologies To Recessed Alarm Contacts, Identifying Exclusions In Errors And Omissions Coverage For Builder Tract Homes And The Installation Of Recessed Contacts, Case Studies, Water Damage, Mold And Piercing The Building Envelope. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.

- May 2013, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Machine Wired Screens: Proper Application And Installation, Teaneck, New Jersey. Topics: Proper Application And Installation Of Machine Wired Screens, Type Of Machine Wired Screens, Inside Screens, Outside Screens, Wire Trap, Magnetic Contact Trap, Horizontal Vs. Vertical Mesh Installation, Protective Loop Circuit Supervision, Case Studies, Best Practices When Ordering Machine Wired Screens, When Not Use Machine Wired Screens and False Alarm Issues With Machine Wired Screens And How To Avoid Them. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- May 2013, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, The Alarm Technician, Sponsored By The New Jersey Electronic Security Association, The International Security Conference (ISC) East, New York, New York. Topics: The Policies, Procedures, Customs, Habits, Training And Supervision Of alarm Technicians Will Be Analyzed To Help Determine What, If Anything Need To Be Addressed, Changed, Updated, Modified, Or, Corrected, Understanding Ways To Address Liability Minimization Techniques For The Alarm Technician Through The Company's Policies, Procedures, Customs, Habits, Training, And Supervision, Understanding Ways To Quantify An Alarm Technicians Effectiveness And Performance In The Tasks That They Perform, And Case Studies. Participants: Licensed New Jersey Burglar And Fire Alarm Contractors.
- May 2013, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Residential Security & Fire Alarm Systems, Teaneck, New Jersey. Topics: Detection, Deterrence, Annunciation And Notification, Minimization Of Loss, Proper Recommendation, Application, Installation, Service, Maintenance And Monitoring Of Residential Security And Fire Alarm Systems, Existing Residential Security And Fire Alarm Systems, Equipment Manufacturer's Specifications, Applicable UL Standards, NFPA Standards And Nationally Recognized Industry Standards And Practices, UL 1023, UL 985, Low Temperature And Water Leak Detection Systems, VOIP Dangers, Testing And Completion, Detection Principles, Meeting Minimum Standards, Initiating Devices, Inherent Safeguards, Perimeter Vs. Motion Detection, Partial Perimeter Vs. Full Perimeter, Stay Shunting, Contacts Only, Hardwired, Wireless And Hybrid Systems, Telephone Line Security Options, Smoke Detection, Heat Detection, Carbon Monoxide Detection, Gas Detection, Exceeding Code Requirements, Supplemental Issues With Residential Fire And Code Restrictions With System Detectors And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- May 2013, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Designing Fire Alarm Systems, Teaneck, New Jersey. Topics: Fire Alarm System Design Fundamentals, Overview Of Fire Alarm Systems, Codes And Standards Applicable To Fire Alarm System Design, Initiating Devices, Notification Appliances, Suppression Supervisory Equipment, Integration With Other Building Systems, Integration With Other Building Systems, Fire Alarm Control Unit (FACU), The Input-Output Matrix, UL, Detector Types, Detector Selection, Detection System Cost, Predominant Application, Detection Speed, Fire Alarm Control Units, Fire Alarm Power Supplies, Photoelectronic Smoke Detector, Ionization Smoke Detection, Heat Detectors, Visual Alarms, Wiring Types, Case Studies, And Fire Alarm System Science, Industry Standards, Recognized Practices And Standards Of The Technical Community Of The Fire Alarm Industry. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.

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- April 2013, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Electronic Countermeasures To Highly Skilled & Other Types Of Burglary Circumvention Attacks, Teaneck, New Jersey. Topics: Methodologies To Defeating And Helping To Minimize Successful Circumvention Techniques To Disable Alarm Systems, Employing Sophisticated Countermeasures To Detect System Attacks, Understanding Ways To Help Lower Your Loss Potential When Designing, Installing And Monitoring High-Risk, High-Burglary Exposure Protected Premises, Types Of Occupancy, Assets To Be Protected, Physical Security Safeguards, Value Of Assets, Technology And System Options, And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- April 2013, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Telephone Line Security Methodologies, Teaneck, New Jersey. Topics: Detection And Remote Station Notification Of A Perpetrators Attempt To Cut The Protected Premises Telephone Lines In An Effort To Circumvent The Alarm System, Electronic Countermeasures Utilized For Circumvention Techniques To Disable An Alarm System By Either Cutting The Protected Premises Telephone Lines Or Attacking The Alarm System Equipment Itself, Or Both, Which Would Otherwise Not Be Detected By The Alarm System., Offering Enhanced Security And Monitoring Capabilities To Subscribers, Telephone Line Fault Monitor Options, Telephone Line Security Options, One Way Radio, Two Way Radio, Digital Cellular Radio, Derived Channel Technology, Internet Monitoring, Proper Installation Of Telephone Line Security, Equipment Manufacturer Specifications, UL Standards, Nationally Recognized Industry Standards And Practices, Telephone Line Fault Monitor, Remote Station Monitoring Of Telephone Line Security, Industry Standards Relating To The Monitoring And Dispatching Of Line Cut And/Or Communication Failure Conditions From Protected Premises, Handling Test Fail Conditions, Redundant Telephone Line Security Methodologies, And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- March 2013, Guest Speaker, Alarm Science, The New Jersey Electronic Security Association Meeting, Clark, New Jersey. Topics: Legal Theories & Subrogation: Duty, Breach Of Duty, Proximate Cause, Damages, Legal Arguments: Fraud, Gross Negligence, Violation Of A Fire Code, Failing To Complete The Installation, Violations Of Local Or State Licensing Laws, The UL Certificate, Duties Of An Alarm Contractor: Compliance With The Equipment Manufacturer's Specifications, NFPA Standards, UL Standards, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction, Advise The Customer Of What You Did, Did Not Do, Why, And What If Anything Else Needs To Be Done, Alarm Science, Equipment Manufacturer's Specifications, UL Standards, Nationally Recognized Industry Standards And Practices, Steps To Help Lower Loss Potential When Designing Security Systems: The Security Survey, What Does The Proposal Say, Recommendations Made To The Subscriber, Recommendations Accepted By The Subscriber, Recommendations Made, But Rejected By The Subscriber As A Cost Consideration, What Does The Contract Say?, No Verbal Understandings Changing Or Modifying Any Of The Terms And Conditions Of The Contract, The Existing System: Is Any Part Of The Existing System Ever Tested As Part Of The Takeover And Or New Installation?, Was The Functional And Reliable Life Expectancy Of Existing Components Ever Taken Into Consideration, High Risk High Burglary Exposure Premises, NFPA Standards, When The AHJ Accepts The Wrong Methodology And Case Studies. Participants: Members Of The New Jersey Electronic Association.
- March 2013, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Understanding The Fire Protection Handbook, Teaneck, New Jersey. Topics: Applying The Fire Protection Handbook To The Design, Application, Recommendations, Installation, Programming, Service, Maintenance, And Monitoring Of Fire Alarm And Life Safety Systems, Basics Of Fire And Fire Science, Americas Fire Problem And Fire Protection, Fundamentals Of Fire Safety Building Design , System Concepts For Building Safety, Building And Fire Codes And Standards, Chemistry And Physics Of Fire, Explosions, Dynamics Of Compartment Fire Growth, Theory Of Fire Extinguishment, Environmental Issues In Fire Protection, Fire And Life Safety Education, Fire And Life Safety Education: The State Of The Art, Using Data For Public Education Decision Making, Designing Disaster Education Programs, Fire And Life Safety Education: Theory And Techniques, Reaching High-Risk Groups, Fire Prevention, Electrical Systems And Appliances, Control Of Electrostatic Ignition Sources, Lightning Protection Systems,

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Emergency And Standby Power Supplies, Heating Systems And Appliances, Boiler-Furnaces, Industrial And Commercial Heat Utilization Equipment, Materials, Products, And Environments, Fire Hazards Of Materials, Combustion Products And Their Effects On Life Safety, Detection And Alarm, Fire Alarm Systems, Automatic Fire Detectors, Notification Appliances, Household Fire Warning Equipment, Gas And Vapor Detection Systems And Monitors, Suppression, Water And Water Additives For Fire Fighting, Water Storage Facilities And Suction Supplies, Fire Pumps, Theory Of Automatic Sprinkler Performance, Confining Fires, Building And Site Planning For Fire Safety, Building Construction, Confinement Of Fire In Buildings, Smoke Movement In Buildings, Evacuation Of Occupants, Human Behavior And Fire, Concepts Of Egress Design, System Approaches To Property Classes, Assessing Life Safety Buildings, Organizing For Fire Protection, Evaluation And Planning Of Public Fire Protection, Fire Prevention And Code Enforcement, Planning Fire Station Locations, Information And Analysis For Fire Protection, Fire And Arson Investigation, Fire Data Collection And Data Bases, Fire Risk Analysis, And Performance-Based Fire Codes And Standards.

Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Fortress Protection, LLC, Spark Security And Electronics, Inc., Prism Electronics, Integrated Electronics Solutions And Marshall Alarm Systems, Inc.

- February 2013, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Alarm Company Ethics, Teaneck, New Jersey. Topics: The Policies, Procedures, Customs, And Habits Of Alarm Contractors Will Be Analyzed To Help Determine, What If Anything Needs To Be Addressed, Changed, Updated, Modified, Or Corrected, Ways To Minimize Liability When Alarm Contracting, Minimum Industry Standards, Dealing With High Risk Accounts, Advanced Documentation Methodologies, Case Studies And System Impairments. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Prism Electronics, Spark Security & Electronics, Incorporated, DNE Security Communications, Jaymer Communications Corporation, AJR Security Systems, Incorporated, 1st Precinct Security.
- February 2013, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Selling Effective Security Systems, Teaneck, New Jersey. Topics: Understanding The Methodology Of Alarm Science, Understanding The Attributes Of What Makes A Security System Effective, Understanding The Function Of A Security Survey, Understanding The Criticality Of A Needs Analysis, Understanding How To Quantify The Selling Of Effective Security Systems, Understanding The Motivations Of Purchasing A Security System, How To Sell An Effective Security System, Establishing Credibility, What Are You Actually Selling?, Defining The Risk, Educating The Subscriber, The Anxiety Factor Of The Sale, Determining The Best System For The Application, Hardwired Versus Wireless Systems, Open And Obvious Risks, Environmental Conditions, Cost Considerations, Intentionally Exceeding Minimum Standards, Equipment Manufacturers Specifications, NFPA Standards, UL Standards, And Nationally Recognized Industry Standards And Practices, The Science Of Selling Security Systems, Effective Security System Sales For Twelve Different Types Of Applications, And the Forensic Liability And Case Studies Regarding Litigation Which Was Based On The Sale Of The Security System. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Prism Electronics, Spark Security & Electronics, Incorporated, DNE Security Communications, Jaymer Communications Corporation, AJR Security Systems, Incorporated, 1st Precinct Security.
- February 2013, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Alarm Science, The New Jersey Electronic Security Association²³ Annual Symposium, Atlantic City, New Jersey. Topics: Analysis And Technical Overview Of Alarm Science, Equipment Manufacturer's Specifications, UL Standards And Nationally Recognized Industry Standards And Practices, Duties Of An Alarm Contractor, The 25 Principles Of Alarm Science, Identification Of Defects And Irregularities In Alarm System Design, Application, Installation, Programming, Service,

²³ Formerly The New Jersey Burglar And Fire Alarm Association.

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Inspection, Maintenance, Testing, And Monitoring, Existing Systems, Takeovers, Liability, Policies, Procedures, Customs And Habits And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.

- February 2013, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Troubleshooting, Service & Maintenance, The New Jersey Electronic Security Association Annual Symposium, Atlantic City, New Jersey. Topics: The Fundamentals Of Troubleshooting, Service And Maintenance For All Types Of Residential And Commercial Systems, Understanding Reference Material From NFPA 70, Understanding NFPA 72® When Performing Troubleshooting, Service And Maintenance, Understanding NFPA 730 When Performing Troubleshooting, Service And Maintenance, Understanding NFPA 731 When Performing Troubleshooting, Service And Maintenance, What Is Troubleshooting?-The Art Of Deductive Reasoning, What Is Service?-Keeping The Subscriber Satisfied, What Is Maintenance?-Identifying problems And providing A Corrective Action Plan, How To Minimize Repeat Calls?, Best Practices, When To Attempt To "Fix" It Over The Phone And When A House Call is Necessary?, False Alarms-The Scourge Of The Alarm Industry, Troubleshooting Techniques, Service-Are You Meeting Standards Of Care? Standards As To Charges For Troubleshooting, Service, And Maintenance, Maintenance-What Are Your Duties When Providing Maintenance On An Alarm System?, Forensic Liability Concerns When Providing Troubleshooting, Service, And Maintenance, Examples Of Difficult Problems To Find In Alarm Systems When Providing Troubleshooting, Service, And Maintenance And Forensic Case Studies Regarding Troubleshooting, Service, And Maintenance Liability. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- January 29, 2013, Instructor, Alarm Science Webinar, Doyle Security Systems, Incorporated Annual Meeting, Teaneck, New Jersey. Topics: Legal Theories & Subrogation: Duty, Breach Of Duty, Proximate Cause, Damages, Legal Arguments: Fraud, Gross Negligence, Violation Of A Fire Code, Failing To Complete The Installation, Violations Of Local Or State Licensing Laws, The UL Certificate, Duties Of An Alarm Contractor: Compliance With The Equipment Manufacturer's Specifications, NFPA Standards, UL Standards, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction, Advise the Customer Of What You Did, Did Not Do, Why, And What If Anything Else Needs To Be Done, Alarm Science, Equipment Manufacturer's Specifications, UL Standards, Nationally Recognized Industry Standards And Practices, Steps To Help Lower Loss Potential When Designing Security Systems: The Security Survey, What Does The Proposal Say, Recommendations Made To The Subscriber, Recommendations Accepted By The Subscriber, Recommendations Made, But Rejected By The Subscriber As A Cost Consideration, What Does The Contract Say?, No Verbal Understandings Changing Or Modifying Any Of The Terms And Conditions Of The Contract, The Existing System: Is Any Part Of The Existing System Ever Tested As Part Of The Takeover And Or New Installation?, Was The Functional And Reliable Life Expectancy Of Existing Components Ever Taken Into Consideration, High Risk High Burglary Exposure Premises, NFPA Standards, When The AHJ Accepts The Wrong Methodology And Case Studies. Participants: Executive Staff Of Doyle Security Systems, Incorporated.
- December 2013, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief. Of Department, Basic Methods Of Security Course, Brooklyn, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical

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Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures.

- November 2013, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, The Alarm Technician, Sponsored By The New Jersey Electronic Security Association, The International Security Conference (ISC) East, New York, New York. Topics: The Policies, Procedures, Customs, Habits, Training And Supervision Of Alarm Technicians Will Be Analyzed To Help Determine What, If Anything Need To Be Addressed, Changed, Updated, Modified, Or, Corrected, Understanding Ways To Address Liability Minimization Techniques For The Alarm Technician Through The Company's Policies, Procedures, Customs, Habits, Training, And Supervision, Understanding Ways To Quantify An Alarm Technicians Effectiveness And Performance In The Tasks That They Perform, And Case Studies. Participants: Licensed New Jersey Burglar And Fire Alarm Contractors.
- November 2013, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Security Surveys And Risk Analysis, Sponsored By The New Jersey Electronic Security Association, The International Security Conference (ISC) East, New York, New York. Topics: What Is A Security Survey, How To Apply Security Surveys To Alarm Systems, What Is Risk Analysis, How To Apply Risk Analysis To Alarm Systems, The Crime Triangle, Crime Prevention Through Environmental Design (CPTED) Techniques And Methodologies, Performing A Security Survey: What To Do, What Not To Do, And How To Help Make Sure That You Have Not Missed Anything, Foreseeability And Criticality, Quantifying Risk Analysis And Incorporating It Into The Security Survey, Applying The Crime Triangle Into The Security Survey, Utilizing CPTED In The Security Survey And Risk Analysis Of The Subject Premises, Written Reports And Recommendations And Case Studies. Participants: Licensed New Jersey Burglar And Fire Alarm Contractors.
- November 2013, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Burglar Alarm System Testing Inspection And Maintenance, Vector Security, Lawrenceville, New Jersey. Topics: For The Burglar Alarm System Testing Inspection And Maintenance Course: Identifying Defects And/OR Damaged Equipment, Repairing And/OR Replacing Defective And/OR Damaged Equipment, Identifying Changes In The Protected Premises That Can Affect Burglar Alarm System Performance And Reliability, Identifying System Defects And Irregularities And Providing Corrective Action Plans, Minimum Standards Relating To Testing Of Burglar Alarm Systems, Functional Testing Of Initiating Devices, Documents Findings, Minimum Standards Relating To Inspection Of Burglar Alarm Systems, Utilizing Photography And/OR Videotaping In Burglar Alarm System Inspections, Documentation Findings And Appropriately Notifying Subscribers, Minimum Standards Relating To Maintaining Burglar Alarm Systems, Outdated Technologies, What To Do When The System Cannot Be Replaced With Like, Kind, And Quality Equipment, What To Do When The System Cannot Be Repaired And Case Studies. Participants: Vector Staff Who Hold New Jersey Burglar Alarm Licenses.
- November 2013, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, The Alarm Technician, Vector Security, Lawrenceville, New Jersey. Topics: The Policies, Procedures, Customs, Habits, Training And Supervision Of Alarm Technicians Will Be Analyzed To Help Determine What, If Anything Need To Be Addressed, Changed, Updated, Modified, Or, Corrected, Understanding Ways To Address Liability Minimization Techniques For The Alarm Technician Through The Company's Policies, Procedures, Customs, Habits, Training, And Supervision, Understanding Ways To Quantify An Alarm Technicians Effectiveness And Performance In The Tasks That They Perform, And Case Studies. Participants: Vector Staff Who Hold New Jersey Burglar Alarm Licenses.

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- October 2012, Executive Guest Lecturer, The Forensics Of Alarm Science, Current Issues In Cyber Forensics-MADS6997²⁴, Fairleigh Dickinson University, Teaneck, New Jersey. Topics: The Forensic Study Of Alarm Systems, Case Studies, Methodologies, Investigative Techniques, Equipment Manufacturer's Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Identifying Defects, Irregularities And Indicators Of Fraud In Alarm And Security Investigations. Participants: Undergraduate And Graduate Students Of Fairleigh Dickinson University.
- October 2012, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Troubleshooting, Service And Maintenance, Teaneck, New Jersey. Topics: The Fundamentals Of Troubleshooting, Service And Maintenance For All Types Of Residential And Commercial Systems, Understanding Reference Material From NFPA 70, Understanding NFPA 72® When Performing Troubleshooting, Service And Maintenance, Understanding NFPA 730 When Performing Troubleshooting, Service And Maintenance, Understanding NFPA 731 When Performing Troubleshooting, Service And Maintenance, What Is Troubleshooting?-The Art Of Deductive Reasoning, What Is Service?-Keeping The Subscriber Satisfied, What Is Maintenance?-Identifying problems And Providing A Corrective Action Plan, How To Minimize Repeat Calls?, Best Practices, When To Attempt To "Fix" It Over The Phone And When A House Call is Necessary, False Alarms-The Scourge Of The Alarm Industry, Troubleshooting Techniques, Service-Are You Meeting Standards Of Care? Standards As To Charges For Troubleshooting, Service, And Maintenance, Maintenance-What Are Your Duties When Providing Maintenance On An Alarm System?, Forensic Liability Concerns When Providing Troubleshooting, Service, And Maintenance, Examples Of Difficult Problems To Find In Alarm Systems When Providing Troubleshooting, Service, And Maintenance And Forensic Case Studies Regarding Troubleshooting, Service, And Maintenance Liability. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- October 2012, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Alarm System Programming, Teaneck, New Jersey. Topics: Understanding How To Ensure That Internal System Programming In Both Residential And Commercial Security System Applications Is Properly Performed, Understanding How Equipment Manufacturer Specifications Can Positively Or Negatively Impact On Residential And Commercial Security System Applications, Understanding How NFPA Standards Can Positively Or Negatively Impact On Residential And Commercial Security System Applications, Understanding How Nationally Recognized Industry Standards And Practices Can Positively Or Negatively Impact On Residential And Commercial Security System Applications, Dangers In System Programming, Forensic Liability In System Programming, The Science Of Alarm Programming, Are Your Programming Choices Scientifically And Technically Sound?, What Does Your Subscriber, Know About The Internal Programming Of Their System?, Downloading, Uploading, And Keypad Programming, Dealer Lockout, Verifying Existing System And Takeover Programming, What Standards Did You Follow When You Programmed The System?, Delay Zones-How Much Time Do You Need?, Instant Zones, Controlled Interior Zones, Auto Stay Shunting, Night Stay, 24 Hour Zones, Audible And Silent Zones, Cross-Zoning, Zone Attributes, Stay Shunting, Auto Arming, Auto Disarming, Dialer Delay, Loop Response Time Programming, System Supervision And Timing Parameters, Default Or Custom Internal System Programming And Forensic Case Studies Regarding Alarm System Programming. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- October 2012, Guest Speaker, American Society for Industrial Security (ASIS) Western New Jersey Chapter Meeting, Alarm Science: The Forensic Study of Alarm Systems, Florham Park, New Jersey. Topics: Alarm Science; The Security Survey; Needs Analysis; Critical Detection Points; The Crime Triangle; Case Studies;

²⁴ This course was held in conjunction with Dr. Eamon P. Doherty, Ph.D., CCE, CPP, who is the associate professor of the Cybercrime Training Lab Director, Petrocilli College of Continuing Studies at Fairleigh Dickinson University.

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Circumvention Techniques Utilized By The Criminal Element; Physical Security And Electronic Countermeasures; Defects And Irregularities In Security And Fire Alarm System Design, Application, Recommendations, Installation, Service, Inspection, Maintenance, Repair, Testing And Central Station Monitoring; Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards and Practices; Telephone Line Security, Line Fault Monitoring, and VOIP Issues; One And Two Way Radios; Ambush, Panic and Holdup Systems; Smoke, Heat, And CO Detection Systems, And Utilizing A Security System As A Silent Witness To The Event. Participants: United States Secret Service, Drug Enforcement Administration, Corporate Security Directors, Managers, Security Consultants, And Certified Protection Professionals.

- October 2012, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2012 License Renewal, Fire Alarm System Technical Writing, Teaneck, New Jersey. Topics: Understanding How To Help Ensure That Fire Alarm System Inspection, Testing, And Maintenance Is Properly Performed, Understanding NFPA 72®, The National Fire Alarm Code®, When Performing Fire Alarm System Inspection, Testing And Maintenance, Understanding Equipment Manufacturer's Specifications When Performing Fire Alarm System Inspection, Testing And Maintenance, Forensic Case Studies Will Be Presented In How The Inspection, Testing, And Maintenance Of Fire Alarm Systems Became Significant In Litigation Cases Against Alarm Companies, The Science Of Fire Alarm System Inspection, Testing, And Maintenance, Alarm Contractor Responsibilities When Performing Fire Alarm System Inspection, Testing, And Maintenance, Quantifying System History, Quantifying System Reliability, Meeting Minimum Standards, Having All The Right Tools, Obscuration And Stratification, Functional And Sensitivity Testing, Meeting NFPA 72® Standards, Meeting UL Standards, Identifying Defects And Irregularities In Fire Alarm System Design And Installation, The Fire Watch-When To Call In The Troops, Documentation, The How Of System Inspection, Testing, And Maintenance, Conventional, Addressable, And Analog Systems, Smoke Detectors, Beam Detectors, Heat Detectors, Rate Of Rise Heat Detectors, Duct Detectors, Internal System Programming, Primary And Secondary Communication Paths And Forensic Case Studies Regarding Fire Alarm System Inspection, Testing, And Maintenance. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- October 2012, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2012 License Renewal, Carbon Monoxide Design & Installation, Teaneck, New Jersey. Topics: Topics: Detection And Annunciation Of The Presence Of Carbon Monoxide, Evacuation Of Premises, Notification Of Authorities, UL Standards For Carbon Monoxide Sensors, UL 2034, UL 2075, Detection Principles Of Carbon Monoxide Sensors, Causes Of Carbon Monoxide, Equipment Manufacturer's Specifications, Detection Thresholds For Alarm Activation In Parts Per Million (PPM), Exposure Affects, Installation And Testing, Location And Placement Of Carbon Monoxide Sensors, Minimum Standards For The Installation Of Carbon Monoxide Sensors In Protected Premises, Functional And Exposure Testing Of Carbon Monoxide Sensors, Functional And Reliable Life Expectancy Of Carbon Monoxide Sensors And Circuit, Power, And Initiating Device Supervision And Annunciation. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- September 2012, Guest Speaker, The New Jersey Burglar And Fire Alarm Association (NJBFAA) Northern New Jersey Chapter Meeting, Alarm Science And Forensic Case Studies, Hackensack, New Jersey. Topics: Alarm Science, The Security Survey, Needs Analysis, Critical Detection Points, The Crime Triangle, Case Studies, Duties Of An Alarm Contractor, NFPA 72®, The National Fire Alarm Code®, Training And Supervision, The National Electrical Code (NEC), OSHA Standards, VOIP Issues, Telephone Line Seizure And Telephone Line Security, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, And Nationally Recognized Industry Standards and Practices, Defects And Irregularities In Security And Fire Alarm System Design, Application, Recommendations, Installation, Service, Inspection, Maintenance, Repair, Testing and Central Station Monitoring. Participants: New Jersey Burglar and Fire Alarm Licensed Contractors,

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NJBFAA Members and Board Members, NICET Certified Technicians, Equipment Manufacturers And UL Listed Central Stations.

- July 2012, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2012 License Renewal, Smoke Detectors-The Science Of Automatic Detection, Teaneck, New Jersey. Topics: Fire Science, Smoke Detector Operations And Functionality, Hardwired And Wireless Smoke Detectors, The Visible And Invisible Particles Of Combustion: Understanding The Micron, Smoldering Fires Vs. Fast Flaming Fires, Environmental Limitations Of Smoke Detectors, Technical Limitations Of Smoke Detectors, The Four Stages Of A Fire, Obscuration, Stratification, Equipment Manufacturers Specifications, NFPA, Codes And Standards, Quantifying The Reliability Of Smoke Detectors, UL Standard 217, UL Standard 268, UL Standard 985, UL Standard 864, NFPA 72® The National Fire Alarm Code®, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction (AHJ), International Residential Code (IRC), To Intentionally Exceed Fire Code Requirements Or Not, The Functional And Reliable Life Expectancy Of Smoke Detectors, Placement And Spacing, Different Types Of Smoke Detectors And Smoke Detection Systems, Two-Wire Smoke Detectors, Cross Listing Compatibility, Four Wire Smoke Detectors, Beam Detectors, Duct Detectors, Conventional Smoke Detection Systems, Addressable Smoke Detection Systems, Analog Addressable Smoke Detection Systems, Types Of Smoke Detection Coverage, Emerging Smoke Detection Technologies, Inspection, Testing And Maintenance Of Smoke Detectors, The Proper Methodology For Testing, Inspection And Maintenance, Identification Of Defects And Irregularities In Design, Recommendation, Application, Installation, Placement, Testing, Inspection, Maintenance, Repair And Monitoring Of Smoke Detectors, Functional Vs. Sensitivity Testing, Inherent Safeguards, Power Supervision Relays, End Of Line Resistor Supervision, Dangers And Hazards, Remote Momentary Of Toggle Reset Switch, T-Tapping, Special Applications Where Smoke Detectors Shall Be Installed And/Or Where The Occupancy Is Intrinsically Safe And Case Studies Where Fire Alarm Systems Failed And The Reasons Why. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- July 2012, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2012 License Renewal, Ambush, Holdup & Panic Alarm Systems, Teaneck, New Jersey. Topics: Understanding The Criticality And Purpose Of Ambush, Holdup And Panic Alarm Systems In Residential And Commercial Premises, Understanding And Applying UL 636-The Standard Of Safety For Holdup Alarm Units In Protected Premises, Understanding And Applying The Proper Design, Programming, Location, Installation, Testing And Monitoring Of Ambush, Holdup, And Panic Alarm Systems, Nationally Recognized Industry Standards And Practices, UL 636 Scope, Terminology, Normal Operation Test, Circuit Protection Test, Power Supply Test, Types Of Remote Stations, Extent Of Protection, Bandit-Resisting Enclosure And Alarm, Semiautomatic-Alarm, Manual Alarm, Types Of Radio Frequency Operated Initiating Devices, Manufacturing And Production Tests, Marking, Accessory Equipment, Operation And Electrical Supervision, Power Supplies, Installation, Outside Cables, Wiring Inside Buildings, Maintenance, Standards For Components, Dual Action Vs. Single Action Initiating Devices, Design And Installation Of Holdup And Panic Alarms, The Security Survey, Threat Assessment, Type Of Risk, Accessibility, OSHA Standards Relating To High-Risk Robbery Environments, Industry Standards, Duties Of An Alarm Contractor When Recommending, Designing, Installing, Placing, Programming, Testing, Inspecting, And Monitoring Of Ambush, Holdup And Panic Alarm Systems, Installer Training, Subscriber Training, What The Perpetrator May Already Know About Panic And Holdup Alarm Systems-And How To Counter It, Ambush, Holdup And Panic Alarm Systems For Safes And Vaults, How To Ensure Functional, Technical, Operational And Monitoring Reliability Of Ambush, Holdup, And Panic Alarm Systems, The Crime Triangle And Criminality: Motive, Intent And Opportunity, And Forensic Case Studies Regarding Ambush, Holdup And Panic Alarm System. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.

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- July 2012, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2012 License Renewal, Security Surveys & Risk Analysis, Teaneck, New Jersey. Topics: Defining The Security Survey, How To Apply Security Surveys To Alarm Systems, Defining Risk Analysis, How To Apply Risk Analysis To Alarm Systems, The Crime Triangle-Recognizing Motive, Intent And Opportunity, CPTED-Crime Prevention Through Environmental Design, Techniques And Methodologies, Performing A Security Survey-What To Do, What Not To Do, And How To Help Make Sure That You Have Not Missed Anything, Foreseeability And Criticality, Quantifying Risk Analysis And Incorporating It Into The Security Survey, Applying The Crime Triangle Into The Security Survey-How To Help Break The Crime Triangle, Utilizing CPTED, Crime Prevention Through Environmental Design In The Security Survey And Risk Analysis Of The Subject Premises, Utilizing Either Passive, Active, Or Combination Methodologies, Written Reports And Recommendations, What To Say, What Not To Say, And How To Help Make Sure That Your Recommendations Are Not A One Size Fits All Approach. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- July 2012, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2012 License Renewal, New Jersey Uniform Construction Code, Teaneck, New Jersey. Topics: Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections, 5:23-2.21 Construction Control, 5:23-2.23 Certificate Requirements, Subchapter 3: Subcodes, 5:23-3.6: Standards; Accepted Practice, 5:23-3.8 Products Violating The Code, Subchapter 5: Licensing, 5:23-5.3 Types Of Licenses, Subchapter 6: Rehabilitation Subcode, 5:23-6.2 Applicability And Compliance, 5:23-6.3 Definitions, 5:23-6.4 Repairs, 5:23-6.5 Renovations, 5:23-6.6 Alterations, 5:23-6.7 Reconstruction, And 5:23-6.8 Materials And Method. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- July 2012, Instructor, July 2012, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Americans With Disabilities Act (ADA), Teaneck, New Jersey. Topics: Americans With Disabilities ACT (ADA) Requirements And NFPA 72®, ADA Accessibility Guidelines For Building And Facilities (ADAAG), ADAAG In Comparison To DOJ Standards For Accessible Design And The International Building Code, Manual Pull Stations, Audible Warning Devices: Horns & Speakers, Visual Warning Devices: Strobe Lights, Activating A Manual Fire Alarm Box Requirements, And Emergency Call Systems: Supervised Sprinkler Systems. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- July 2012, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Barrier Free Subcode, Teaneck, New Jersey. Topics: Topics: 5:23-7.1 Applicability, 5:23-7.2 Accessibility Standard, 5:23-7.4 Non-Residential Buildings And Buildings Of Use Group R-1, 5:23-7.5 Residential Buildings Other Than Group R-1, 5:23-7.11 Requirements Applicable To Specific Non-Residential Groups And Group R-1, 5:23-7.12 Requirements Applicable To All Non-Residential Groups, Including Spaces Other Than Guestrooms In Use Group R-1 And 5:23-7.13 Existing Facilities. New Jersey Uniform Construction Code, Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections, 5:23-2.21 Construction Control, 5:23-2.23 Certificate Requirements, Subchapter 3: Subcodes, 5:23-3.6: Standards; Accepted Practice, 5:23-3.8 Products Violating The Code, Subchapter 5: Licensing, 5:23-5.3 Types Of Licenses, Subchapter 6: Rehabilitation Subcode, 5:23-6.2 Applicability And Compliance, 5:23-6.3 Definitions, 5:23-6.4 Repairs, 5:23-6.5 Renovations, 5:23-6.6 Alterations, 5:23-6.7 Reconstruction, And 5:23-6.8 Materials And Method. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.

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- July 2012, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For the 2013 License Renewal, Industrial Safety, Teaneck, New Jersey. Topics: Analysis And Technical Overview, Understanding And Applying The National Electrical Code In All Types Of Burglar, Fire Alarm And CCTV System Installations, Wiring Methods And Materials, Equipment For General Use, Special Occupancies, Divisions 1 And 2, Class I Locations, Class II Locations, Class III Locations, Intrinsically Safe Systems, NEC Tables, Article 725 Class 1, Class 2, And Class 3 Remote Control, Signaling, And Power Limited Circuits, Article 760: Fire Alarm Systems, Non-Power Limited Fire Alarms (NPLFA) Circuits, Power-Limited Fire Alarm (PLFA) Circuits, Optical Fiber Cables And Raceways, Overcurrent Protection, Location, Enclosures, Disconnecting, Grounding, Circuit And System Grounding, Grounding Electrode System And Electric Conductors, Enclosure, Raceway And Service Cable Grounding, Equipment Grounding, Methods Of Equipment Grounding, Direct Current Systems, Instruments, Meters And Relays, Surge Arrestors, Connecting Surge Arrestors, Ensuring NEC Compliance When Installing Burglar, Fire Alarm, And CCTV Systems, Common Errors In NEC Compliance And Checklists For Identification Of NEC Errors. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: New Jersey Burglar And/Or Fire Alarm License Holders.
- June 2012, Instructor, Best Practices For Installation Managers, 2012 Electronic Security Expo (ESX)-Tune Into the Future, Nashville, Tennessee. Topics: What Is Alarm Science, Duties Of An Alarm Contractor, Compliance, Statutory Requirements, Training And Supervision, Advanced Documentation Methodologies, Specialized Needs Checklist, Testing, And Liability Concerns. Participants: Alarm Industry Professionals From The Following Companies: Leading Security Solutions, AVC Security, Inc., Interactive Solutions Group LLC, ADT Commercial Security, G4S Technology, Communication Service Solutions (CSS), Heartland Security, AICC, Fleetwood Security & Electronic Services, Inc, American Video And Security, Frase Protection, AE Ventures, Elko & Associates, LTD, Safety Care Technologies LLC, Legrand North America, Rapid Response Monitoring, Falcon Security, ACS-Access Control Systems, LLC, DMP, First Alarm, IEL Security & Monitoring Ltd., eOriginal, Inc., MONITRONICS, Wayne Alarm Systems, FBN Security Co, LLC, Axis Communications Oberlander Alarm Systems, Inc., Modern Systems, Inc., Honeywell Systems, Ramond Lynn and Associates, LLC, Knox Integrated Systems, 25K Digital, Lutron Electronics Company, Inc., Moon Security Services, Inc, ADS Security, RAM Capital Corp. At Systems, Helpingleaders.com, CPI Security, Frase Protection, MicroPower Technologies, Inc, Secure US, SimplyHome, SIC Consulting Inc., The SAFEGUARD SYSTEM, INC, NuVo Technologies, ESA, Miller Protective Service, Inc., Amherst Alarm Inc, Monitronics, Control4, AFC Security, Security Central, Solquest Management, LLC, Van Couver Fire And Radus Security, Z-Wave Alliance, Welte Electronic Systems Co, Integrated Security Solutions, Inc., And Zoepaz Incorporated.
- June 2012, Instructor, Establishing Dealer Standards, 2012 Electronic Security Expo (ESX)-Tune Into the Future, Nashville, Tennessee. Topics: The Alarm Contractor, Alarm Contractor Duties, What Is Your Purpose, Legal Theories, Polices, Procedures, Customs & Habits, Questions Regarding Your Policies, Procedures And Operations, Legal Arguments Utilized To Bypass Alarm Contractor Protective Legal Language, Including Limitation Of Liability And Exculpatory Provisions, What The Alarm Industry Says, Alarm Science, Alarm Science Or Junk Science, Issues, Key Facts, Case Studies And What Action To Take If Your Company Is Sued. Participants: Alarm Industry Professionals From The Following Companies: ESC Central, FE Moran Inc, Crime Alert Monitoring Center, Inc., Customer Alarm/CCI, Interactive Solutions Group LLC, Rapid Response Monitoring Inc., SecureWatch 24, Security Response Center, G4S Technology, Communication Service Solutions (CSS), EGB Systems & Solutions, Inc., ADS Security, AICC, The Protection Bureau, Guardian Alarm Company, First Response Systems Inc., American Video and Security, Buckeye Protective Service, Inc., ELKO & Associates, LTD, Safety Care Technologies LLC, Legrand, North America, DMP, First Alarm , FE Moran, Inc., CPI Security, LDS Church Security, eOriginal, Inc., MONITRONICS, Alert Alarm Hawaii, FBN Security Group, LLC, Axis Communications, Quick Response, Waste Management Security Services, Honeywell Systems, Raymond Lynn And Associates, LLC, Certified System Design, LLC, Axis

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Communications, 25K Digital, Lutron Electronics Company, Inc., Loss Prevention Services, Inc., ComSouth, Honeywell Security Group, ADS Security, State Farm Insurance, RAM Capital Crop, General Alarm, Wayne Alarm Systems, Helpingleaders.com, Wegmans Food Markets, Inc., Devcon Security Services Crop., MicroPower Technologies, Inc., Alarm Detection Systems, Inc., Simply Home, SIC Consulting, Inc., Per Mar Security Services, The SAFEGUARD SYSTEM, INC, NuVo Technologies, Wayne Alarm Systems, State Farm Insurance, ESA, ESC Central, Control4, Honeywell Systems, Security Central, Z-Wave Alliance, Amherst Alarm, Inc., General Alarm And Delux.

- June 2012, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, Brooklyn, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures.
- June 2012, Keynote Speaker, Alarm Science Boot Camp, Pennsylvania Burglar And Fire Alarm Association (PBFAA) 30th Annual Exp, Lancaster, Pennsylvania. Topics: Educating The Customer, Definition Of Risk Assessment, Definition Of Threat, Threat Analysis, The Crime Triangle, Crime Prevention Through Environmental Design (CPTED), The Alarm Contractor, The Alarm Contractors Duties, The Alarm Contractor's Purpose, Types of Initiating Devices, Subrogation, Defeating Alarm Company Contracts, Legal Arguments Utilized To Bypass Alarm Contractor Protective Legal Language, Including Limitation Of Liability And Exculpatory Provisions, Legal Arguments, What The Alarm Industry Says, Temperature Sensors, Issues Facing Alarm Contractors, Alarm Science Or Junk Science, Key Facts, Questions Regarding Your Policies, Procedures And Operations, Policies, Procedures, Customs & Habits, Olin's law, What Actions To Take If Your Company Is Sued, Case Studies, Loss Potential, Legal Liability And Theories Utilized Against Alarm Companies, Misconceptions About Alarm Contractor Liability, Marketing, Liability, Or Minimization Of Liability, Inherent Safeguards, Anatomy Of A Lawsuit, Existing Systems, NFPA Standards, High Risk High Burglary Exposure Premises, And Nationally Recognized Industry Standards And Practices. Participants: Security Industry Dealers, Installers, Supplies And Vendors.
- May 2012, Instructor, Alarm Science, Complete Security Systems, Incorporated, Marlboro, New Jersey. Topics: Alarm Science, Equipment Manufacturer's Specifications, UL Standards, Nationally Recognized Industry Standards And Practices, Industry Professionals, New Jersey's Alarm Contracting Licensing Laws, Duties Of An Alarm Contractor, 25 Principles of Alarm Science, Identification Of Defects And Irregularities In Alarm System Design, Application, Installation, Programming, Service, Inspection, Maintenance, Testing And Monitoring, How To Apply Alarm Science To Existing Takeover Systems That Your Company Did Not Install, How To Limit Your Liability When Subscriber Does Not Want To Pay To Have Their System Repair Or Replace In Accordance With Alarm Science And/Or Recommendations, Incorporating Alarm Science Into Your Policies, Procedures, Customs And Habits, Case Studies and Limiting Your Company's Loss Potential When Alarm Contracting, And/Or When Designing, Recommending, Applying, Installing, Servicing, Maintaining And Monitoring Security And Fire Alarm System. Participants: President, General Managers, Service Managers, Technicians, Installers, NICET Certified Technicians And Support Staff.

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- May 2012, Instructor, Burglar Alarm System Inspection, Complete Security Systems, Incorporated, Marlboro, New Jersey. Topics: Identifying Defective And/Or Damaged Equipment, Repairing And/Or Replacing Defective And/or Damaged Equipment, Identifying Changes In The Protected Premises That Can Affect Burglar Alarm System Performance And Reliability, Identifying System Defects And Irregularities And Providing Corrective Action Plans, Minimum Standards Relating To Testing Of Burglar Alarm Systems, Functional Testing Of Initiating Devices, Document Findings, Minimum Standards Relating To Inspection Of Burglar Alarm Systems, Utilizing Photography And/Or Videotaping In Burglar Alarm System Inspection, Documenting Findings And Appropriately Notifying Subscribers, Central Station Duration, Frequency, Location Methodology, Minimum Standards Relating To Maintaining Burglar Alarm System, Outdated Technologies, What To Do When The System Cannot Be Replaced With Like, Kind, And Quality Equipment What To Do When The System Cannot Be Repaired. Participants: President, General Managers, Service Managers, Technicians, Installers, NICET Certified Technicians And Support Staff.
- May 2012, Instructor, Existing Systems & Takeovers, Complete Security Systems, Incorporated, Marlboro, New Jersey. Topics: Policies And Procedures When Connecting To Existing And Take Over Accounts That Your Company Did Not Design Or Install, Identifying Defects And Irregularities On Existing And Take Over Accounts, Documenting Services Provided To Help Minimize Liability, Documenting Services Not Being Provided To Help Minimize Liability, Offering Full System Inspections, Developing Policies And Procedures To Address Existing And Takeover Accounts So The Systems Reliability And Effectiveness Can Be Quantified, Common But Serious Mistakes And Case Studies. Participants: President, General Managers, Service Managers, Technicians, Installers, NICET Certified Technicians And Support Staff.
- May 2012, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Americans With Disabilities Act (ADA), Alarm Distributors, Hackensack, New Jersey. Topics: Americans With Disabilities ACT (ADA) Requirements And NFPA 72®, ADA Accessibility Guidelines For Building And Facilities (ADAAG), ADAAG In Comparison To DOJ Standards For Accessible Design And The International Building Code, Manual Pull Stations, Audible Warning Devices: Horns & Speakers, Visual Warning Devices: Strobe Lights, Activating A Manual Fire Alarm Box Requirements, And Emergency Call Systems: Supervised Sprinkler Systems. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- May 2012, Instructor, New Jersey Division of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Barrier Free Subcode, Alarm Distributors, Hackensack, New Jersey. Topics: 5:23-7.1 Applicability, 5:23-7.2 Accessibility Standard, 5:23-7.4 Non-Residential Buildings And Buildings Of Use Group R-1, 5:23-7.5 Residential Buildings Other Than Group R-1, 5:23-7.11 Requirements Applicable To Specific Non-Residential Groups And Group R-1, 5:23-7.12 Requirements Applicable To All Non-Residential Groups, Including Spaces Other Than Guestrooms In Use Group R-1 And 5:23-7.13 Existing Facilities. New Jersey Uniform Construction Code, Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections, 5:23-2.21 Construction Control, 5:23-2.23 Certificate Requirements, Subchapter 3: Subcodes, 5:23-3.6: Standards; Accepted Practice, 5:23-3.8 Products Violating The Code, Subchapter 5: Licensing, 5:23-5.3 Types Of Licenses, Subchapter 6: Rehabilitation Subcode, 5:23-6.2 Applicability And Compliance, 5:23-6.3 Definitions, 5:23-6.4 Repairs, 5:23-6.5 Renovations, 5:23-6.6 Alterations, 5:23-6.7 Reconstruction, And 5:23-6.8 Materials And Method. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- May 2012, Instructor, New Jersey Division of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, New Jersey Uniform Construction Code, Alarm Distributors, Hackensack, New Jersey. Topics: Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention,

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- March 2012, Executive Guest Lecturer, Alarm And Security Science John Jay College Of Criminal Justice²⁵, Manhattan, New York, For Assistant Professor Jana Arsovska, Ph.D, Sociology Department, John Jay College Of Criminal Justice. Topics: The Security Survey, Needs Analysis, Central Station Duration, Frequency And Location Methodology In Making The Security System A Capable Guardian, The Routine Activity Approach Theory, Three Minimal Elements Of The Routine Activity Approach, Target Hardening, Crime Prevention Through Environmental Design (CPTED, Critical Detection Point (CDP), Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Telephone Line Security Methodologies, Security System Reliability, The Crime Triangle, Covert And Overt Video Surveillance Systems, Verified Video, And Sonitrol Systems Using A Security System As A Capable Guardian, Quantifying Early Warning Detection To A Security Systems Effectiveness, The Criticality Of Central Station Notification To A Security Systems Effectiveness, Eleven Principles That Make Security System's Effective And Reliable, Circumvention Techniques Utilized By The Criminal Element, One And Two Way Radios, Interfacing Physical Security And Electronic Security, Forensic Case Studies, Indicators Of Fraud In Forensic Investigations, Are Security Systems Circumvented By The Criminal Element?, Are Security System Failing Due To Other Reasons?, Scientifically Examining Alarm System Failures And The Improper Methodologies Utilized, Foreseeability, Detectability, And Preventability, System Reliability- Mission Critical, Life Safety Detection Systems- Smoke, Heat And Carbon Monoxide Sensors, Early Warning, And Duty, One Size Fits All Approach Methodologies, Panic And Holdup Systems, Intrusion Detection Systems, Layers Of Detection And Protection, Concentric Circles Of Detection And Protection, UL Listed Safe Ratings, And The Theories Of Breach Of Duty, Proximate Cause, And Damages. Participants: Undergraduate And Graduate Students In The International Criminology And Crime And Justice Theory Courses.
- March 2012, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, The Alarm Technician: Policies, Procedures, Customs, Habits, Training, And Supervision, Vector Security, Lawrenceville, New Jersey. Topics: The Policies, Procedures, Customs, Habits, Training and Supervision Of Alarm Technicians, Understanding Ways To Address Liability, Minimization Techniques For The Central Station Duration, Frequency, Location Methodology, Understanding Ways To Quantify An Alarm Technicians Effectiveness And Performance In The Tasks That They Perform And Case Studies. Participants: Vector Staff Who Hold New Jersey Burglar Alarm Licenses.
- March 2012, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Burglar Alarm System Testing, Inspection, And Maintenance, Vector Security, Lawrenceville, New Jersey. Topics: Identifying Defective And/Or Damaged Equipment, Repairing And/Or Replacing Defective And/Or Damaged Equipment, Identifying Changes In The Protected Premises That Can Affect burglar Alarm System Performance And Reliability, Identifying System Defects And Irregularities And Providing Corrective Action Plans, Minimum Standards Relating To Testing Of Burglar Alarm Systems, Functional Testing Of Initiating Devices, Document Findings, Minimum Standards Relating To Inspection Of Burglar Alarm Systems, Utilizing Photography And/Or Videotaping In Burglar Alarm System Inspection, Documenting Findings And Appropriately Notifying Subscribers, Central Station

²⁵ Provide test questions based on the curriculum for Undergraduate and Graduate Students in The International Criminology And Crime And Justice Theory Courses.

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Duration, Frequency, Location Methodology, Minimum Standards Relating To Maintaining Burglar Alarm System, Outdated Technologies, What To Do When The System Cannot Be Replaced With Like, Kind, And Quality Equipment What To Do When The System Cannot Be Repaired. Participants: Vector Staff Who Hold New Jersey Burglar Alarm Licenses.

- February 2012, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Troubleshooting, Service And Maintenance, The New Jersey Burglar And Fire Alarm Association Annual Symposium, Atlantic City, New Jersey. Topics: The Fundamentals Of Troubleshooting, Service And Maintenance For All Types Of Residential And Commercial Systems, Understanding Reference Material From NFPA 70, Understanding NFPA 72® When Performing Troubleshooting, Service And Maintenance, Understanding NFPA 730 When Performing Troubleshooting, Service And Maintenance, Understanding NFPA 731 When Performing Troubleshooting, Service And Maintenance, What Is Troubleshooting?-The Art Of Deductive Reasoning, What Is Service?-Keeping The Subscriber Satisfied, What Is Maintenance?-Identifying Problems And Providing A Corrective Action Plan, How To Minimize Repeat Calls, Best Practices, When To Attempt To “Fix” It Over The Phone And When A House Call Is Necessary, False Alarms-The Scourge Of The Alarm Industry, Troubleshooting Techniques, Service-Are You Meeting Standards Of Care? Standards As To Charges For Troubleshooting, Service, And Maintenance, Maintenance-What Are Your Duties When Providing Maintenance On An Alarm System?, Forensic Liability Concerns When Providing Troubleshooting, Service, And Maintenance, Examples Of Difficult Problems To Find In Alarm Systems When Providing Troubleshooting, Service, And Maintenance And Forensic Case Studies Regarding Troubleshooting, Service, And Maintenance Liability. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- February 2012, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Overt And Covert CCTV Systems, The New Jersey Burglar And Fire Alarm Association Annual Symposium, Atlantic City, New Jersey. Topics: Proper Design And Installation Of CCTV Systems, Understanding The Differences Between Overt And Covert CCTV Systems, Liability Concerns When Installing CCTV Systems, Types Of Occupancies, Lighting, Security Concerns, Vandalism, Prior Loss History, Purpose Of System, Expectation Of Privacy, Equipment Manufacturer’s Specifications, Onsite Surveillance, Remote View, DVR Technologies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- February 2012, Instructor, The New Jersey Burglar And Fire Alarm Annual Symposium, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, The Alarm Technician: Policies, Procedures, Customs, Habits, Training & Supervision, Atlantic City, New Jersey. Topics: The Policies, Procedures, Customs, Habits, Training and Supervision Of Alarm Technicians, Understanding Ways To Address Liability, Minimization Techniques For The Alarm Technician Through The Company’s Policies, Procedures, Customs, Habits Training And Supervision, Understanding Ways To Quantify An Alarm Technicians Effectiveness And Performance In The Tasks That They Perform And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- December 2011, Instructor, Alarm Science Boot Camp: Sales, Certified Security, Fort Lauderdale, Florida. Topics: Selling Security Systems, The Alarm Contractor’s Representations, Recommendations And Design Of The System, Compliance With State Licensing Law, Manufacturer’s Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction, Educate, Identify Risks And Vulnerabilities, Help Minimize Loss, Customer Satisfaction, Achieving Referrals, Provide Electronic Countermeasures, Getting The Job Done Properly, Types Of Initiating Devices, Subrogation, Duty, Breach Of Duty, Proximate Cause, Damages, Causation, Defeating Alarm Company Contracts, Legal Arguments Utilized To Bypass Alarm Contractor Protective Legal Language, Limitation Of Liability, Exculpatory Provisions, Legal Arguments And What The Alarm Industry Says In Response, Temperature Sensors, Alarm Science Or Junk Science, Key Facts, Questions Regarding Your Policies, Procedures And Operations, Policies, Procedures, Customs, Habits, What Action To Take If Your Company Is

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Sued, And Steps To Help Lower Loss Potential When Designing Security Systems. Participants: Vector Sales Personnel.

- December 2011, Instructor, Alarm Science Boot Camp: The Alarm Technician, Certified Security, Fort Lauderdale, Florida. Topics: The Alarm Technician-Duty, Breach Of Duty, Proximate Cause, Damages, Defining The Responsibilities Of An Alarm Technician, What Makes A Good Technician, Defining Bad Habits Of An Alarm Technician, Defining Good Habits Of An Alarm Technician, UL Standards, NFPA Standards, Early Detection, Four States Of A Fire, Sensitivity Vs. Functional Testing, Obscuration And Stratification, Supplemental Vs. Code Require, Limited, Partial And Complete Coverage, Nationally Recognized Industry Standards And Practices, Job Start And Clean Up, Customer Training, Paperwork, Documentation, Existing Systems And Takeovers, Limited Warranty, Contracts, Serious Defects And Irregularities, Monitoring An Existing System, Reliability, Functionality, Fire alarm System Testing, Radio Back-up Design And Installation, Hold-Up And Panic Buttons, Lower Temperature Sensors, Testing, Clear And Concise Documentation In The Alarm Industry, Common Defects Found In Residential And Commercial Alarm Systems, Magnetic Contacts, Identifying Liability Concerns and Minimize Liability, Service Records And History, 25 Principles Of Alarm Sciences, Theories Of Legal Liability When Connecting To An Alarm System For Central Station Monitoring, What Standards Do You Follow When Inspecting, Testing, And Maintaining Burglar Alarm Systems, And NFPA 731. Participants: Vector Technicians, Installers, And Management.
- December 2011, Instructor, Alarm Science Boot Camp: Sales, Certified Security, Jacksonville, Florida. Topics: Selling Security Systems, The Alarm Contractor's Representations, Recommendations And Design Of The System, Compliance With State Licensing Law, Manufacturer's Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction, Educate, Identify Risks And Vulnerabilities, Help Minimize Loss, Customer Satisfaction, Achieving Referrals, Provide Electronic Countermeasures, Getting The Job Done Properly, Types Of Initiating Devices, Subrogation, Duty, Breach Of Duty, Proximate Cause, Damages, Causation, Defeating Alarm Company Contracts, Legal Arguments Utilized To Bypass Alarm Contractor Protective Legal Language, Limitation Of Liability, Exculpatory Provisions, Legal Arguments And What The Alarm Industry Says In Response, Temperature Sensors, Alarm Science Or Junk Science, Key Facts, Questions Regarding Your Policies, Procedures and Operations, Policies, Procedures, Customs, Habits, What Action To Take If Your Company Is Sued, And Steps To Help Lower Loss Potential When Designing Security Systems. Participants: Vector Sales Personnel.
- December 2011, Instructor, Alarm Science Boot Camp: The Alarm Technician, Certified Security, Jacksonville, Florida. Topics: The Alarm Technician-Duty, Breach Of Duty, Proximate Cause, Damages, Defining The Responsibilities Of An Alarm Technician, What Makes A Good Technician, Defining Bad Habits Of An Alarm Technician, Defining Good Habits Of An Alarm Technician, UL Standards, NFPA Standards, Early Detection, Four States Of A Fire, Sensitivity Vs. Functional Testing, Obscuration and Stratification, Supplemental Vs. Code Require, Limited, Partial And Complete Coverage, Nationally Recognized Industry Standards And Practices, Job Start And Clean Up, Customer Training, Paperwork, Documentation, Existing Systems And Takeovers, Limited Warranty, Contracts, Serious Defects And Irregularities, Monitoring An Existing System, Reliability, Functionality, Fire Alarm System Testing, Radio Back-Up Design And Installation, Hold-Up And Panic Buttons, Lower Temperature Sensors, Testing, Clear And Concise Documentation In The Alarm Industry, Common Defects Found In Residential And Commercial Alarm Systems, Magnetic Contacts, Identifying Liability Concerns and Minimize Liability, Service Records And History, 25 Principles of Alarm Sciences, Theories of Legal Liability When Connecting To An Alarm System For Central Station Monitoring, What Standards Do You Follow When Inspecting, Testing, And Maintaining Burglar Alarm Systems, And NFPA 731. Participants: Vector Technicians, Installers, And Management.

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- November 2011, Instructor, Alarm Science Boot Camp: Sales, Vector Security, Inc. Columbus, Ohio. Topics: Selling Security Systems, The Alarm Contractor's Representations, Recommendations And Design Of The System, Compliance With State Licensing Law, Manufacturer's Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction, Educate, Identify Risks And Vulnerabilities, Help Minimize Loss, Customer Satisfaction, Achieving Referrals, provide Electronic Countermeasures, Getting The Job Done Properly, Types Of Initiating Devices, Subrogation, Duty, Breach Of Duty, Proximate Cause, Damages, Causation, Defeating Alarm Company Contracts, Legal Arguments Utilized To Bypass Alarm Contractor Protective Legal Language, Limitation Of Liability, Exculpatory Provisions, Legal Arguments And What The Alarm Industry Says In Response, Temperature Sensors, Alarm Science Or Junk Science, Key Facts, Questions Regarding Your Policies, Procedures and Operations, Policies, Procedures, Customs, Habits, What Action To Take If Your Company Is Sued, And Steps To Help Lower Loss Potential When Designing Security Systems. Participants: Vector Sales Personnel.
- November 2011, Instructor, Alarm Science Boot Camp: The Alarm Technician, Vector Security, Inc., Columbus, Ohio. Topics: The Alarm Technician-Duty, Breach Of Duty, Proximate Cause, Damages, Defining The Responsibilities Of An Alarm Technician, What Makes A Good Technician, Defining Bad Habits Of An Alarm Technician, Defining Good Habits Of An Alarm Technician, UL Standards, NFPA Standards, Early Detection, Four States Of A Fire, Sensitivity Vs. Functional Testing, Obscuration and Stratification, Supplemental Vs. Code Require, Limited, Partial And Complete Coverage, Nationally Recognized Industry Standards And Practices, Job Start And Clean Up, Customer Training, Paperwork, Documentation, Existing Systems And Takeovers, Limited Warranty, Contracts, Serious Defects And Irregularities, Monitoring An Existing System, Reliability, Functionality, Fire Alarm System Testing, Radio Back-Up Design And Installation, Hold-Up And Panic Buttons, Lower Temperature Sensors, Testing, Clear And Concise Documentation In The Alarm Industry, Common Defects Found In Residential And Commercial Alarm Systems, Magnetic Contacts, Identifying Liability Concerns and Minimize Liability, Service Records And History, 25 Principles of Alarm Sciences, Theories Of Legal Liability When Connecting To An Alarm System For Central Station Monitoring, What Standards Do You Follow When Inspecting, Testing, And Maintaining Burglar Alarm Systems, And NFPA 731. Participants: Vector Technicians, Installers, And Management.
- November 2011, Instructor, Alarm Science Boot Camp: Sales, Vector Security, Inc., Columbia, Maryland. Topics: Selling Security Systems, The Alarm Contractor's Representations, Recommendations And Design Of The System, Compliance With State Licensing Law, Manufacturer's Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction, Educate, Identify Risks And Vulnerabilities, Help Minimize Loss, Customer Satisfaction, Achieving Referrals, provide Electronic Countermeasures, Getting The Job Done Properly, Types Of Initiating Devices, Subrogation, Duty, Breach Of Duty, Proximate Cause, Damages, Causation, Defeating Alarm Company Contracts, Legal Arguments Utilized To Bypass Alarm Contractor Protective Legal Language, Limitation Of Liability, Exculpatory Provisions, Legal Arguments And What The Alarm Industry Says In Response, Temperature Sensors, Alarm Science Or Junk Science, Key Facts, Questions Regarding Your Policies, Procedures and Operations, Policies, Procedures, Customs, Habits, What Action To Take If Your Company Is Sued, And Steps To Help Lower Loss Potential When Designing Security Systems. Participants: Vector Sales Personnel.
- November 2011, Instructor, Alarm Science Boot Camp: The Alarm Technician, Vector Security, Inc., Columbia, Maryland. Topics: The Alarm Technician-Duty, Breach Of Duty, Proximate Cause, Damages, Defining The Responsibilities Of An Alarm Technician, What Makes A Good Technician, Defining Bad Habits Of An Alarm Technician, Defining Good Habits Of An Alarm Technician, UL Standards, NFPA Standards, Early Detection, Four States Of A Fire, Sensitivity Vs. Functional Testing, Obscuration and Stratification, Supplemental Vs. Code Require, Limited, Partial And Complete Coverage, Nationally Recognized Industry Standards And Practices, Job Start And Clean Up, Customer Training, Paperwork, Documentation, Existing

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Systems And Takeovers, Limited Warranty, Contracts, Serious Defects And Irregularities, Monitoring An Existing System, Reliability, Functionality, Fire alarm System Testing, Radio Back-Up Design And Installation, Hold-Up And Panic Buttons, Lower Temperature Sensors, Testing, Clear And Concise Documentation In The Alarm Industry, Common Defects Found In Residential And Commercial Alarm Systems, Magnetic Contacts, Identifying Liability Concerns and Minimize Liability, Service Records And History, 25 Principles of Alarm Sciences, Theories of Legal Liability When Connecting To An Alarm System For Central Station Monitoring, What Standards Do You Follow When Inspecting, Testing, And Maintaining Burglar Alarm Systems, And NFPA 731. Participants: Vector Technicians, Installers, And Management.

- October 2011, Instructor, Alarm Science Boot Camp: The Alarm Technician, Vector Security, Inc., Wilkes-Barre, Pennsylvania. Topics: The Alarm Technician-Duty, Breach Of Duty, Proximate Cause, Damages, Defining The Responsibilities Of An Alarm Technician, What Makes A Good Technician, Defining Bad Habits Of An Alarm Technician, Defining Good Habits Of An Alarm Technician, UL Standards, NFPA Standards, Early Detection, Four States Of A Fire, Sensitivity Vs. Functional Testing, Obscuration And Stratification, Supplemental Vs. Code Require, Limited, Partial And Complete Coverage, Nationally Recognized Industry Standards And Practices, Job Start And Clean Up, Customer Training, Paperwork, Documentation, Existing Systems And Takeovers, Limited Warranty, Contracts, Serious Defects And Irregularities, Monitoring An Existing System, Reliability, Functionality, Fire alarm System Testing, Radio Back-up Design And Installation, Hold-Up And Panic Buttons, Lower Temperature Sensors, Testing, Clear And Concise Documentation In The Alarm Industry, Common Defects Found In Residential And Commercial Alarm Systems, Magnetic Contacts, Identifying Liability Concerns and Minimize Liability, Service Records And History, 25 Principles Of Alarm Sciences, Theories Of Legal Liability When Connecting To An Alarm System For Central Station Monitoring, What Standards Do You Follow When Inspecting, Testing, And Maintaining Burglar Alarm Systems, And NFPA 731. Participants: Vector Technicians, Installers, And Management.
- October 2011, Instructor, Alarm Science Boot Camp: Sales, Vector Security Inc., Wilkes-Barre, Pennsylvania. Topics: Selling Security Systems, The Alarm Contractor's Representations, Recommendations And Design Of The System, Compliance With State Licensing Law, Manufacturer's Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction, Educate, Identify Risks And Vulnerabilities, Help Minimize Loss, Customer Satisfaction, Achieving Referrals, Provide Electronic Countermeasures, Getting The Job Done Properly, Types Of Initiating Devices, Subrogation, Duty, Breach Of Duty, Proximate Cause, Damages, Causation, Defeating Alarm Company Contracts, Legal Arguments Utilized To Bypass Alarm Contractor Protective Legal Language, Limitation Of Liability, Exculpatory Provisions, Legal Arguments And What The Alarm Industry Says In Response, Temperature Sensors, Alarm Science Or Junk Science, Key Facts, Questions Regarding Your Policies, Procedures and Operations, Policies, Procedures, Customs, Habits, What Action To Take If Your Company Is Sued, And Steps To Help Lower Loss Potential When Designing Security Systems. Participants: Vector Sales Personnel.
- September 2011, Instructor, Alarm Science Boot Camp: The Alarm Technician, Vector Security, Inc., Warrendale, Pennsylvania. Topics: The Alarm Technician-Duty, Breach Of Duty, Proximate Cause, Damages, Defining The Responsibilities Of An Alarm Technician, What Makes A Good Technician, Defining Bad Habits Of An Alarm Technician, Defining Good Habits Of An Alarm Technician, UL Standards, NFPA Standards, Early Detection, Four States Of A Fire, Sensitivity Vs. Functional Testing, Obscuration And Stratification, Supplemental Vs. Code Require, Limited, Partial And Complete Coverage, Nationally Recognized Industry Standards And Practices, Job Start And Clean Up, Customer Training, Paperwork, Documentation, Existing Systems And Takeovers, Limited Warranty, Contracts, Serious Defects And Irregularities, Monitoring An Existing System, Reliability, Functionality, Fire alarm System Testing, Radio Back-up Design And Installation, Hold-Up And Panic Buttons, Lower Temperature Sensors, Testing, Clear And Concise Documentation In The Alarm Industry, Common Defects Found In Residential And Commercial Alarm Systems, Magnetic Contacts,

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Identifying Liability Concerns and Minimize Liability, Service Records And History, 25 Principles of Alarm Sciences, Theories Of Legal Liability When Connecting To An Alarm System For Central Station Monitoring, What Standards Do You Follow When Inspecting, Testing, And Maintaining Burglar Alarm Systems, And NFPA 731. Participants: Vector Technicians, Installers, And Management.

- September 2011, Instructor, Alarm Science Boot Camp: Sales, Vector Security, Inc., Warrendale, Pennsylvania. Topics: Selling Security Systems, The Alarm Contractor's Representations, Recommendations And Design Of The System, Compliance With State Licensing Law, Manufacturer's Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction, Educate, Identify Risks And Vulnerabilities, Help Minimize Loss, Customer Satisfaction, Achieving Referrals, Provide Electronic Countermeasures, Getting The Job Done Properly, Types Of Initiating Devices, Subrogation, Duty, Breach Of Duty, Proximate Cause, Damages, Causation, Defeating Alarm Company Contracts, Legal Arguments Utilized To Bypass Alarm Contractor Protective Legal Language, Limitation Of Liability, Exculpatory Provisions, Legal Arguments And What The Alarm Industry Says In Response, Temperature Sensors, Alarm Science Or Junk Science, Key Facts, Questions Regarding Your Policies, Procedures and Operations, Polices, Procedures, Customs, Habits, What Action To Take If Your Company Is Sued, And Steps To Help Lower Loss Potential When Designing Security Systems. Participants: Vector Sales Personnel.
- September 2011, Instructor, Alarm Science Boot Camp: Sales, Vector Security, Inc., Plymouth Meeting, Pennsylvania. Topics: Selling Security Systems, The Alarm Contractor's Representations, Recommendations And Design Of The System, Compliance With State Licensing Law, Manufacturer's Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction, Educate, Identify Risks And Vulnerabilities, Help Minimize Loss, Customer Satisfaction, Achieving Referrals, Provide Electronic Countermeasures, Getting The Job Done Properly, Types Of Initiating Devices, Subrogation, Duty, Breach Of Duty, Proximate Cause, Damages, Causation, Defeating Alarm Company Contracts, Legal Arguments Utilized To Bypass Alarm Contractor Protective Legal Language, Limitation Of Liability, Exculpatory Provisions, Legal Arguments And What The Alarm Industry Says In Response, Temperature Sensors, Alarm Science Or Junk Science, Key Facts, Questions Regarding Your Policies, Procedures and Operations, Polices, Procedures, Customs, Habits, What Action To Take If Your Company Is Sued, And Steps To Help Lower Loss Potential When Designing Security Systems. Participants: Vector Sales Personnel.
- September 2011, Instructor, Alarm Science Boot Camp: The Alarm Technician, Vector Security, Inc., Plymouth Meeting, Pennsylvania. Topics: The Alarm Technician-Duty, Breach Of Duty, Proximate Cause, Damages, Defining The Responsibilities Of An Alarm Technician, What Makes A Good Technician, Defining Bad Habits Of An Alarm Technician, Defining Good Habits Of An Alarm Technician, UL Standards, NFPA Standards, Early Detection, Four States Of A Fire, Sensitivity vs. Functional Testing, Obscuration and Stratification, Supplemental Vs. Code Require, Limited, Partial And Complete Coverage, Nationally Recognized Industry Standards And Practices, Job Start And Clean Up, Customer Training, Paperwork, Documentation, Existing Systems And Takeovers, Limited Warranty, Contracts, Serious Defects And Irregularities, Monitoring An Existing System, Reliability, Functionality, Fire Alarm System Testing, Radio Back-Up Design And Installation, Hold-Up And Panic Buttons, Lower Temperature Sensors, Testing, Clear And Concise Documentation In The Alarm Industry, Common Defects Found In Residential And Commercial Alarm Systems, Magnetic Contacts, Identifying Liability Concerns and Minimize Liability, Service Records And History, 25 Principles Of Alarm Sciences, Theories Of Legal Liability When Connecting To An Alarm System For Central Station Monitoring, What Standards Do You Follow When Inspecting, Testing, And Maintaining Burglar Alarm Systems, And NFPA 731. Participants: Vector Technicians, Installers, And Management.

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- June 2011, Instructor, The Importance Of Installation Documentation, 2011 Electronic Security Expo²⁶ (ESX), Charlotte, North Carolina. Topics: Requests For Proposals, Bids, Proposals, Customer Contracts, AIA Contracts, Changes And Modifications, Benefits Of Proper Documentation, Visibility Into Business Processes, Checks And Balances For Information, Tasks, And Expectations, Management Of Information, Project Budgeting And Scheduling, Operational Readiness, Supply Chain In Support To Start-Up Operations And Maintenance, Minimizing Liability, Minimizing Errors, Lowering The Potential Of Payment Issues, Lowering The Potential Of Counterclaims And Offsets To Billing, Providing Clarity When There Are Interpretation Issues, Recurring Services And Maintenance Duties, Streamline Acceptance By The Authority Having Jurisdiction, Approval And Verification Relating To Acceptance Or Change Orders, Final Submittal And Certification Expectations, Contract Representations, Contract Specifications, Functionality And Operational Requirements, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Statutory Requirements, As-Built Drawings, The Authority Having Jurisdiction, New Installation Diagram Systems And Practices, Retention Policies And Litigation Readiness.
- June 2011, Co-Instructor, Balancing Customer Service Excellence With Legal Requirements & Protocols, 2011 Electronic Security Expo (ESX), Charlotte, North Carolina. Topics: Growing Existing Customer Accounts, Marketing Plan For Existing Customer, Measuring Current Account Growth And New Accounts, Incentive Plans For Existing Customers And Growing Business, Central Station Liability Awareness, The Purpose Of A Central Station, How You Dispatch: One Size Fits All Approach Or Account Specific, High-Risk High Burglar Exposure Accounts, Standards That Apply To Central Stations: UL Standards, NFPA Standards, Industry Standards, Written Dispatch Instructions, Requirements Of The Authority Having Jurisdiction (AHJ), State Licensing Laws, Special Instructions, Training For Your Operators: Telephone Etiquette, Listening Skills, Facts, Tone Of Voice, Escalating Calls, Standard Operating Procedures, Risk Management, Documentation, The Criticality Of The Duration And Frequency Of Alarm Signals Received, Types Of Signals: Burglar Alarms, Smoke And Heat Alarms, Trouble Alarms, Panic, Hold-Up And Ambush Alarms, Failure To Restore, Test Fail Conditions, Supervisory, Carbon Monoxide Detection, Gas Detection, Low Temperature, Communications Failure Signal, Water Detection, Non-Supervised Test Timer Signals, Bad Habits, Do Not Dispatch Instructions, Do Not Dispatch Instructions While Construction Is On-Going, Only Report Facts-Never Guess, Log Only Instructions, Correctly Logging Information, Voice Logger Recordings, What You Tell The Subscriber, Notifying Subscribes And Emergency Contacts Of All Alarm Activations, What You Don't Tell The Subscriber, Identifying Problematic Dispatch Or Non-Dispatch Instructions, And Identifying Suspicious Account Activity Or Central Station Contacts.
- June 2011, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, Brooklyn, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical

²⁶ The Electronic Security Expo (ESX), owned by the Central Station Alarm Association (CSAA) and NBFAA, recently released preliminary figures showing strong growth for the second year of the annual event. Exhibit space and total attendance at the event both grew more than 25 percent vs. 2008 — 148 exhibiting and sponsoring companies filled just shy of 50,000 gross square feet of space, and more than 2,100 industry professionals attended the event, including roughly half of the 100 largest installing and monitoring companies in the nation.

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Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures.

- April 2011, Co-Instructor, Balancing Customer Service Excellence With Legal Requirements & Protocols, An ESXPERIENCE Webinar, Sponsored By Monitronics. Topics: Growing Existing Customer Accounts, Marketing Plan For Existing Customer, Measuring Current Account Growth And New Accounts, Incentive Plans For Existing Customers And Growing Business, Central Station Liability Awareness, The Purpose Of A Central Station, How You Dispatch: One Size Fits All Approach Or Account Specific, High-Risk High Burglar Exposure Accounts, Standards That Apply To Central Stations: UL Standards, NFPA Standards, Industry Standards, Written Dispatch Instructions, Requirements Of The Authority Having Jurisdiction (AHJ), State Licensing Laws, Special Instructions, Training For Your Operators: Telephone Etiquette, Listening Skills, Facts, Tone Of Voice, Escalating Calls, Standard Operating Procedures, Risk Management, Documentation, The Criticality Of The Duration And Frequency Of Alarm Signals Received, Types Of Signals: Burglar Alarms, Smoke And Heat Alarms, Trouble Alarms, Panic, Hold-Up And Ambush Alarms, Failure To Restore, Test Fail Conditions, Supervisory, Carbon Monoxide Detection, Gas Detection, Low Temperature, Communications Failure Signal, Water Detection, Non-Supervised Test Timer Signals, Bad Habits, Do Not Dispatch Instructions, Do Not Dispatch Instructions While Construction Is On-Going, Only Report Facts-Never Guess, Log Only Instructions, Correctly Logging Information, Voice Logger Recordings, What You Tell The Subscriber, Notifying Subscribers And Emergency Contacts Of All Alarm Activations, What You Don't Tell The Subscriber, Identifying Problematic Dispatch Or Non-Dispatch Instructions, And Identifying Suspicious Account Activity Or Central Station Contacts. Participants: Presidents, Vice Presidents, Sales Representatives, Regional Sales Managers, Compliance Coordinators, Contract Administrators, General Managers, Project Managers, Managers, HR Managers, Regional Managers, Technical Recruiters, Central Station Managers, Directors, Partners, Operations Managers, Administration Officers, Directors Of Customer Services, Managing Directors, Risk Managers, Training Coaches, Operations Analysts, Directors Of Monitoring, Office Managers, Members, Marketing Supervisors, Assistant Supervisors, Quality Assurance Representatives, Systems Designers And Drafters, False Alarm Control Assistant Supervisors, CCC Managers, FACT Supervisors, Directors Of Outbound And Executive Teams, Marketing Managers, Monitoring Station Supervisors, Owners, Chief Executive Managers, CEOs, Info Sec. Specialists, District Vice Presidents And Telephone Operators Of The Following Companies: AAR Electronics, Inc., Absolute Alarm Inc., Acadian Monitoring Services, Ackerman Security Systems, Advanced Detection Systems, Inc., AE Ventures, ALARMGUARD SECURITY, INC., Amazing Security & Investigations, LLC, American Alarm Systems, Inc., AMP Alarm, AVC Security, Inc., Bass Security Services, Inc., Bay Alarm Company, BUCKEYE PROTECTIVE SERVICES, Castle Security & Home Integration, Checkpoint Systems, Inc., Clear Solutions, Inc., Custom Alarm/Custom Communications, Inc., Department Of Treasury, Dispatch Center, LTD., DMC Security Services, Inc., F.D. Security Systems, Inc., FBN Security Co LLC, Homeland Video 7 Security, HSS, Hunt Enterprises, Inc., Innovacs Systems Solutions, LLC, Kleinbard Bell & Brecker, LLP, LDS Church, Liamuiga Security Company, Loss Prevention Services, Inc., MADEAM, Inc. Mission Security Systems, Inc., MLN, Monitronics LP, Monitronics Security, Morgan Alarm Company, Inc., Northern Lights Security, Omnicare Associates, LTD, PASS Security, Rapid Response, Reed Brothers & Security, RFI Security, Inc., Safe Systems, Inc., Safetycare, SDA Security, Seacoast Security, Security Alarm Monitoring, Inc., Security One Solutions, Select Security, Systems By Walsh, Towne Monitoring Service, Universal Security Monitoring, LLC, Vector Security, Inc. VoIPAlarm.com And Wayne Alarm Systems, Inc.

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- March 2011, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, Classified Location. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures.
- February 2011, Instructor, Alarm Science Boot Camp, SecureWatch 24, New York, New York. Topics: Case Studies, Sales, Installation, And Central Station Monitoring Policies And Procedures, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, The National Electrical Code, Nationally Recognized Industry Standards And Practices, Fire Science, Smoke And Heat Detection Systems, Carbon Monoxide And Gas Detectors, The Security Survey, Design, Installation, Application, Programming, Testing, Service, Maintenance And Central Station Monitoring, Ambush And Panic Systems, Inherent Safeguards, Service Calls, Stay Shunting, Machine Wired Screens, Automated And Supervised Signaling And Testing, Polling Requirements, UL Certificated Systems, Telephone Line Security, High-Risk High Burglary Exposure Premises And Systems, Circumvention Techniques, Existing Systems, Takeovers, Upgrades, Technical And Operational Analysis Of Alarm Equipment And Functionality, Low And High Temperature Detection Systems, Water Detection Systems, Medical Alarm Systems And Nurse Call, CCTV And Access Control Systems, Physical Security And CPTED, NFPA Acceptance And Reacceptance Testing, Functional And Sensitivity Testing, VOIP And DSL, RJ 31X Jack And Telephone Line Seizure, NFPA 72®, Code Requirements And Interpretation, And Alarm System Defects And Irregularities. Participants: SecureWatch 24 Senior Level Executives.
- January 2011, Instructor, New Jersey Burglar And Fire Alarm Association (NJBFAA) 2011 Annual Symposium New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Burglar Alarm System Testing, Inspection & Maintenance, Atlantic City, New Jersey. Topics: Identifying Defective And/Or Damaged Equipment, Repairing And/Or Replacing Defective And/Or Damaged Equipment, Identifying Changes In The Protected Premises That Can Affect Burglar Alarm System Performance And Reliability, Identifying System Defects And Irregularities And Providing Corrective Action Plan, Minimum Standards Relating To Testing Of Burglar Alarm Systems, Functional Testing Of Initiating Devices, Documenting Findings, Minimum Standards Relating To Inspection Of Burglar Alarm Systems, Utilizing Photography And/Or Videotaping In Burglar Alarm System Inspections, Documenting Findings And Appropriately Notifying Subscriber, Minimum Standards Relating To Maintaining Burglar Alarm Systems, Outdated Technologies, What To Do When The System Cannot Be Replaced With Like, Kind, And Quality Equipment, What To Do When The System Cannot Be Repaired and Case Studies: Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- January 2011, Instructor, New Jersey Burglar And Fire Alarm Association (NJBFAA) 2011 Annual Symposium New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, Commercial Security & Fire Alarm Systems, Atlantic City, New Jersey. Topics: Minimization Of Loss, Proper Recommendation, Application, Installation, Service, Maintenance And Monitoring Of Commercial Security And Fire Alarm Systems, Existing Systems, Equipment Manufacturers

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Specification, Applicable UL Standards, NFPA Standards And Nationally Recognized Industry Standards And Practices, VOIP Dangers, Testing And Completion, Loss Potential, Detection Principles, Minimum Standards, Initiating Devices, Perimeter Vs. Motion Detection, Partial Perimeter Vs. Full Perimeter, Stay Shunting, Hardwired, Wireless And Hybrid Systems, Telephone Line Security Options, Smoke Detection, Heat Detection, Carbon Monoxide Detection, Gas Detection, Wet And Dry Sprinkler Systems, Exceeding Code Requirements And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.

- January 2011, Instructor, New Jersey Burglar And Fire Alarm Association (NJBFAA) 2011 Annual Symposium New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2013 License Renewal, The Alarm Technician: Policies, Procedures, Customs, Habits, Training & Supervision, Atlantic City, New Jersey. Topics: The Policies, Procedures, Customs, Habits, Training and Supervision Of Alarm Technicians, Understanding Ways To Address Liability, Minimization Techniques For The Alarm Technician Through The Company's Policies, Procedures, Customs, Habits Training And Supervision, Understanding Ways To Quantify An Alarm Technicians Effectiveness And Performance In The Tasks That They Perform And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- November 2010, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, Metrotech Center, JP Morgan Chase, Brooklyn, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures. Participants: Police Officers From The 6th, 40th, 62nd, 66th, 68th, 71st, 73rd, 75th, 81st, 84th, 88th, 106th, 108th, 110th, 112th And 115th Precincts, Police Sergeants From The 73rd And 75th Precincts, Detectives From CPS And PSA 2 And PSA 4, And Security Officers From Sloan Kettering Memorial Hospital Security.
- September 2010, Instructor, Fire Alarm Science Boot Camp, Township Of Teaneck Fire Department, Teaneck, New Jersey. Topics: Basic Overview Of Fire Alarm System Plans And Approvals, Conventional, Addressable And Analog Addressable Systems, Carbon Monoxide And Gas Detection Exposure Testing, Equipment System Options- Recipe For Disaster?, 25 Principles Of Alarm Science, Uniform Fire Code, New Jersey State Fire Prevention Code, Department Of Law And Public Safety Division Of Consumer Affairs, Board Of Examiners Of Electrical Contractors Statues And Regulations, Inherent Safeguards, Wiring Methods, Inspections, Functional And Reliable Life Expectancy Of Initiating Devices, Identifying Defects And Irregularities In Fire Alarm System Design, Programming, Installation, And Monitoring, NFPA 72^{@27}, Paperwork And Documentation, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Testing And Inspection Requirements, Common Defects Found In Fire Alarm System Design, Programming, Application, Selection, Installation, Testing, Service, Maintenance And Monitoring, Case Studies Where Fire Alarm Systems Were Reported To Fail, And The Reasons Why, Demonstrative Equipment, Arson Investigations: Utilizing Alarm Systems As A Silent Witness To The Event. Participants: Code Officials, Captains, And Firefighters.

²⁷ Registered trademark of The National Fire Protection Association (NFPA).

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- September 2010, Instructor, Alarm Science Boot Camp, ADS Security, Inc., Nashville, Tennessee. Topics: Case Studies, Sales, Installation, And Central Station Monitoring Policies And Procedures, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, The National Electrical Code, Nationally Recognized Industry Standards And Practices, Fire Science, Smoke And Heat Detection Systems, Carbon Monoxide And Gas Detectors, The Security Survey, Design, Installation, Application, Programming, Testing, Service, Maintenance And Central Station Monitoring, Ambush And Panic Systems, Inherent Safeguards, Service Calls, Stay Shunting, Machine Wired Screens, Automated And Supervised Signaling And Testing, Polling Requirements, UL Certificated Systems, Telephone Line Security, High-Risk High Burglary Exposure Premises And Systems, Circumvention Techniques, Existing Systems, Takeovers, Upgrades, Technical And Operational Analysis Of Alarm Equipment And Functionality, Low And High Temperature Detection Systems, Water Detection Systems, Medical Alarm Systems And Nurse Call, CCTV And Access Control Systems, Physical Security And CPTED, NFPA Acceptance And Reacceptance Testing, Functional And Sensitivity Testing, VOIP And DSL, RJ 31X Jack And Telephone Line Seizure, NFPA 72®, Code Requirements And Interpretation, And Alarm System Defects And Irregularities. Participants: Employees From All Divisions Of Company, Field Technicians, Central Station Dispatchers, Supervisors, Sales Consultants And Office Personnel, Leadership Team, ADS Security, Inc. Corporate Legal Counsel, President Of ADS Security, Inc.
- August 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Fire Alarm System Inspection, Testing & Maintenance, Vector Security, Incorporated, Lawrenceville, New Jersey. Topics: Topics: System Reliability, Detection Capabilities, Repair And/Or Replacement Of System Impairments, Testing, Inspection And Maintenance Standards, NFPA 72®, The Authority Having Jurisdiction, Nationally Recognized Industry Standards And Practices, Fire Alarm System Performance Criteria, Equipment Manufacturer Specifications, Life Expectancy Of Different Types Of Initiating Detection Devices, Quantifying Performance Of Fire Alarm Systems, Documentation, Inspection And Testing Records, Acceptance Testing, Re-Acceptance Testing, Delegation Of Duty For Maintenance On Fire Alarm Systems, AHJ Notification On System Impairments, And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders For Vector Security, Incorporated.
- August 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal , Understanding UL Certificated Systems, Vector Security, Incorporated, Lawrenceville, New Jersey. Topics: UL Certified System Requirements, Performance Based Standards, Equipment Manufacturer's Specifications, UL 681, UL 827. The Authority Having Jurisdiction, The UL Certificate, Becoming UL Listed, Maintaining Your UL Listing, Yearly Inspection, Defects Report, Service And Maintenance Obligations And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders For Vector Security, Incorporated.
- August 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Existing Systems & Takeovers, Teaneck, New Jersey. Topics: Policies And Procedures When Connecting To Existing And Take Over Accounts That Your Company Did Not Design Or Install, Identifying Defects And Irregularities On Existing And Take Over Accounts, Documenting Services Provided To Help Minimize Liability, Documenting Services Not Being Provided To Help Minimize Liability, Offering Full System Inspections, Developing Policies And Procedures To Address Existing And Takeover Accounts So The Systems Reliability And Effectiveness Can Be Quantified, Common But Serious Mistakes And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Homeguard, Inc., Firmus Electronics, Inc., Quality Alarm, Reliant Systems, Universal Security Systems, Inc., WJM Innovations, Wire Excellence Security, Leading Edge, Deterrent Technologies, Radar Security Systems, Inc., Sirina Protection Systems, T.J. Security, Fire & Security Specialists, Shea Communications, And J.A.S.S. Security Systems, Inc.

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- August 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, The Alarm Contractor: Policies, Procedures, Customs & Habits, Teaneck, New Jersey. Topics: The Policies, Procedures, Customs, And Habits Of Alarm Contractors, Ways To Minimize Liability When Alarm Contracting, Minimum Industry Standards, Dealing With High Risk Accounts, Advanced Documentation Methodologies, Case Studies, And System Impairments. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Homeguard, Inc., Firmus Electronics, Inc. , Quality Alarm, Reliant Systems, Universal Security Systems, Inc., WJM Innovations, Wire Excellence Security, Leading Edge, Deterrent Technologies, Radar Security Systems, Inc., Sirina Protection Systems, T.J. Security, Fire & Security Specialists, Shea Communications, And J.A.S.S. Security Systems, Inc.
- August 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, The Alarm Technician: Policies, Procedures, Customs, Habits, Training & Supervision, Teaneck, New Jersey. Topics: The Policies, Procedures, Customs, Habits, Training And Supervision Of Alarm Technicians, Understanding Ways To Address Liability, Minimization Techniques For The Alarm Technician Through The Company's Policies, Procedures, Customs, Habits Training And Supervision, Understanding Ways To Quantify An Alarm Technicians Effectiveness And Performance In The Tasks That They Perform And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Homeguard, Inc., Firmus Electronics, Inc., Quality Alarm, Reliant Systems, Universal Security Systems, Inc., WJM Innovations, Wire Excellence Security, Leading Edge, Deterrent Technologies, Radar Security Systems, Inc., Sirina Protection Systems, T.J. Security, And J.A.S.S. Security Systems, Inc.
- August 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Machine Wired Screens: Proper Application And Installation, Teaneck, New Jersey. Topics: Proper Application And Installation Of Machine Wired Screens, Type Of Machine Wired Screens, Inside Screens, Outside Screens, Wire Trap, Magnetic Contact Trap, Horizontal Vs. Vertical Mesh Installation, Protective Loop Circuit Supervision, Case Studies, Best Practices When Ordering Machine Wired Screens, When Not Use Machine Wired Screens and False Alarm Issues With Machine Wired Screens And How To Avoid Them. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Fire & Security Specialists, Leading Edge, Aurora Home Systems, LLC, T.J. Security, Associated Fire Protection, Deterrent Technologies, Wire Excellence Security, Radar Security Systems, Inc., Marshall Alarm Systems, Inc., Flashback, Inc., Accutronic Systems, Reliant Systems, Firmus Electronics, LLC, Shea Communications, Universal Security Systems, Inc., And Jaymer Communications Corporation.
- August 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Fire Alarm System Testing, Inspection & Maintenance, Teaneck, New Jersey. Topics: System Reliability, Detection Capabilities, Repair And/Or Replacement Of System Impairments, Testing, Inspection And Maintenance Standards, NFPA 72®, The Authority Having Jurisdiction, Nationally Recognized Industry Standards And Practices, Fire Alarm System Performance Criteria, Equipment Manufacturer Specifications, Life Expectancy Of Different Types Of Initiating Detection Devices, Quantifying Performance Of Fire Alarm Systems, Documentation, Inspection And Testing Records, Acceptance Testing, Re-Acceptance Testing, Delegation Of Duty For Maintenance On Fire Alarm Systems, AHJ Notification On System Impairments, And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Fire & Security Specialists, Leading Edge, Aurora Home Systems, LLC, T.J. Security, Associated Fire Protection, Deterrent Technologies, Wire Excellence Security, Radar Security Systems, Inc., Marshall Alarm Systems, Inc., Flashback, Inc., Accutronic Systems, Reliant Systems, Firmus Electronics, LLC, Sirina Protection Systems, Shea Communications, Universal Security Systems, Inc., And Q.A.L. Security Corporation.

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- July 2010, Instructor, New Jersey Burglar And Fire Alarm Association (NBFAA), New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, NFPA 72®: The National Fire Alarm Code®-2007 Edition, Red Bank, New Jersey. NFPA 72®-The National Fire Alarm Code®, Teaneck, New Jersey. Topics: Understanding NFPA 72®, Navigating Through NFPA 72®, Plans, Permits And Submittals, The Authority Having Jurisdiction (AHJ), Definitions, Fundamentals Of Fire Alarm Systems, Application, Purpose, Equipment, Personnel, System Fundamentals, Documentation, Impairments, Mass Notification Systems, Appliances, Purpose, Performance-Based Design, General Requirements, Requirements For Smoke And Heat Detectors, Heat-Sensing Fire Detectors, Smoke-Sensing Fire Detectors, Radiant Energy-Sensing Fire Detectors, Combinations, Multi-Criteria And Multi-Sensor Detectors, Other Fire Detectors, Sprinkler Waterflow Alarm-Initiating Devices, Supervisory Signal-Initiating Devices, Smoke Detectors For Control Of Smoke Spread, Mass Notification Systems, Notification Appliances For Fire Alarm Systems, Application, Purpose, Audible Characteristics, Visible Characteristics-Public Mode And Private Mode, Supplementary Visible Signaling Method, Textual Audible Appliances, Textual Visible Appliances, Tactile Appliances, Standard Emergency Service Interface, Mass Notification Systems, Supervising Station Fire Alarm Systems, Fire Alarm Systems Or Central Station Service, Proprietary Supervising Station, Remote Supervising Station Fire Alarm Systems, Communications Methods For Supervising Station Fire Alarm Systems, Mass Notification Systems, Inspection, Testing, Maintenance, Single And Multiple Station Alarms And Household Fire Alarm Systems, Basic Requirements, Assumptions, Detection And Notification, Power Supplies, Equipment Performance, Installation, Optional Functions, Maintenance And Tests, Markings And Instructions. Participants: New Jersey Burglar And/Or Fire Alarm License Holders.
- July 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Ambush, Holdup & Panic Alarm Systems, Teaneck, New Jersey. Topics: Understanding The Criticality And Purpose Of Ambush, Holdup And Panic Alarm Systems In Residential And Commercial Premises, Understanding And Applying UL 636-The Standard Of Safety For Holdup Alarm Units In Protected Premises, Understanding And Applying The Proper Design, Programming, Location, Installation, Testing And Monitoring Of Ambush, Holdup, And Panic Alarm Systems, Nationally Recognized Industry Standards And Practices, UL 636 Scope, Terminology, Normal Operation Test, Circuit Protection Test, Power Supply Test, Types Of Remote Stations, Extent Of Protection, Bandit-Resisting Enclosure And Alarm, Semiautomatic-Alarm, Manual Alarm, Types Of Radio Frequency Operated Initiating Devices, Manufacturing And Production Tests, Marking, Accessory Equipment, Operation And Electrical Supervision, Power Supplies, Installation, Outside Cables, Wiring Inside Buildings, Maintenance, Standards For Components, Dual Action Vs. Single Action Initiating Devices, Design And Installation Of Holdup And Panic Alarms, The Security Survey, Threat Assessment, Type Of Risk, Accessibility, OSHA Standards Relating To High-Risk Robbery Environments, Industry Standards, Duties Of An Alarm Contractor When Recommending, Designing, Installing, Placing, Programming, Testing, Inspecting, And Monitoring Of Ambush, Holdup And Panic Alarm Systems, Installer Training, Subscriber Training, What The Perpetrator May Already Know About Panic And Holdup Alarm Systems-And How To Counter It, Ambush, Holdup And Panic Alarm Systems For Safes And Vaults, How To Ensure Functional, Technical, Operational And Monitoring Reliability Of Ambush, Holdup, And Panic Alarm Systems, The Crime Triangle And Criminality: Motive, Intent And Opportunity, And Forensic Case Studies Regarding Ambush, Holdup And Panic Alarm Systems. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Fire & Security Specialists, Homeguard, Inc., Perfect Security Systems, Accutronic Security Systems, Han Kook Security, Inc., Leading Edge Technology Services, LLC, Jaymer Communications Corporation, Quality Alarm Company, W.J.M. Innovations, LTD, Flashback, Inc., D.N.E. Security Communications, APB Security Systems, Firmus Electronics, LLC, Fire Security Technologies, Aurora Home Systems, Bergen Protective, Statewide Monitoring, APS Security, Radar Security Systems, Inc., Deterrent Technologies, Stereo & Media Consultants, Inc. And Jaymer Communications, Corporation.

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- July 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Industrial Safety: The National Electrical Code, Teaneck, New Jersey. Topics: Analysis And Technical Overview, Understanding And Applying The National Electrical Code In All Types Of Burglar, Fire Alarm And CCTV System Installations, Wiring Methods And Materials, Equipment For General Use, Special Occupancies, Divisions 1 And 2, Class I Locations, Class II Locations, Class III Locations, Intrinsically Safe Systems, NEC Tables, Article 725 Class 1, Class 2, And Class 3 Remote Control, Signaling, And Power Limited Circuits, Article 760: Fire Alarm Systems, Non-Power Limited Fire Alarms (NPLFA) Circuits, Power-Limited Fire Alarm (PLFA) Circuits, Optical Fiber Cables And Raceways, Overcurrent Protection, Location, Enclosures, Disconnecting, Grounding, Circuit And System Grounding, Grounding Electrode System And Electric Conductors, Enclosure, Raceway And Service Cable Grounding, Equipment Grounding, Methods Of Equipment Grounding, Direct Current Systems, Instruments, Meters And Relays, Surge Arrestors, Connecting Surge Arrestors, Ensuring NEC Compliance When Installing Burglar, Fire Alarm, And CCTV Systems, Common Errors In NEC Compliance And Checklists For Identification Of NEC Errors. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Fire & Security Specialists, Homeguard, Inc., Perfect Security Systems, Accutronic Security Systems, Han Kook Security, Inc., Leading Edge Technology Services, LLC, Jaymer Communications Corporation, Quality Alarm Company, W.J.M. Innovations, LTD, Flashback, Inc., D.N.E. Security Communications, APB Security Systems, Firmus Electronics, LLC, Fire Security Technologies, Aurora Home Systems, Bergen Protective, Statewide Monitoring, APS Security, Radar Security Systems, Inc., Deterrent Technologies, Stereo & Media Consultants, Inc. And Jaymer Communications, Corporation.
- July 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Overt & Covert CCTV Systems, Teaneck, New Jersey. Topics: Proper Design And Installation Of CCTV Systems, Understanding The Differences Between Overt And Covert CCTV Systems, Liability Concerns When Installing CCTV Systems, Types Of Occupancies, Lighting, Security Concerns, Vandalism, Prior Loss History, Purpose Of System, Expectation Of Privacy, Equipment Manufacturer's Specifications, Onsite Surveillance, Remote View, DVR Technologies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Bergen Protective Systems, Inc., E.F. Lorence & Sons, Inc., Leading Edge Technology Services, LLC, Homeguard, Inc., Falcon Engineered Systems, LLC, Stereo & Media Consultants, Inc., Firmus Electronics, LLC, Advanced Technology Partners, Inc., Quality Alarm Company, Carbone Security, Kriebel Security, Inc., Fire Security Technologies, Intercounty Alarm, DMI Security Services, Ever-Ready, Eastec, FBS Security, Flashback, Inc., APB Security Systems, Deterrent Technologies, APS Security, Aurora Home Systems, Stereo & Media Consultants, Inc., And Jaymer Communications Corporation.
- July 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Residential Security & Fire Alarm Systems, Teaneck, New Jersey. Topics: Detection, Deterrence, Annunciation And Notification, Minimization Of Loss, Proper Recommendation, Application, Installation, Service, Maintenance And Monitoring Of Residential Security And Fire Alarm Systems, Existing Residential Security And Fire Alarm Systems, Equipment Manufacturer's Specifications, Applicable UL Standards, NFPA Standards And Nationally Recognized Industry Standards And Practices, UL 1023, UL 985, Low Temperature And Water Leak Detection Systems, VOIP Dangers, Testing And Completion, Detection Principles, Meeting Minimum Standards, Initiating Devices, Inherent Safeguards, Perimeter Vs. Motion Detection, Partial Perimeter Vs. Full Perimeter, Stay Shunting, Contacts Only, Hardwired, Wireless And Hybrid Systems, Telephone Line Security Options, Smoke Detection, Heat Detection, Carbon Monoxide Detection, Gas Detection, Exceeding Code Requirements, Supplemental Issues With Residential Fire And Code Restrictions With System Detectors And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Bergen Protective

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Systems, Inc., E.F. Lorence & Sons, Inc., Leading Edge Technology Services, LLC, Homeguard, Inc., Falcon Engineered Systems, LLC, Stereo & Media Consultants, Inc., Firmus Electronics, LLC, Advanced Technology Partners, Inc., Quality Alarm Company, Carbone Security, Kriebel Security, Inc., Fire Security Technologies, Intercounty Alarm, DMI Security Services, Ever-Ready, Eastec, FBS Security, Flashback, Inc., APB Security Systems, Deterrent Technologies, APS Security, Aurora Home Systems, Stereo & Media Consultants, Inc., And Jaymer Communications Corporation.

- July 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Security Surveys & Risk Analysis, Teaneck, New Jersey. Topics: Defining The Security Survey, How To Apply Security Surveys To Alarm Systems, Defining Risk Analysis, How To Apply Risk Analysis To Alarm Systems, The Crime Triangle-Recognizing Motive, Intent And Opportunity, CPTED-Crime Prevention Through Environmental Design, Techniques And Methodologies, Performing A Security Survey-What To Do, What Not To Do, And How To Help Make Sure That You Have Not Missed Anything, Foreseeability And Criticality, Quantifying Risk Analysis And Incorporating It Into The Security Survey, Applying The Crime Triangle Into The Security Survey-How To Help Break The Crime Triangle, Utilizing CPTED, Crime Prevention Through Environmental Design In The Security Survey And Risk Analysis Of The Subject Premises, Utilizing Either Passive, Active, Or Combination Methodologies, Written Reports And Recommendations, What To Say, What Not To Say, And How To Help Make Sure That Your Recommendations Are Not A One Size Fits All Approach. Participants: Bergen Protective Systems, Inc., E.F. Lorence & Sons, Inc., Leading Edge Technology Services, LLC, Homeguard, Inc., Falcon Engineered Systems, LLC, Stereo & Media Consultants, Inc., Firmus Electronics, LLC, Advanced Technology Partners, Inc., Quality Alarm Company, Carbone Security, Kriebel Security, Inc., Fire Security Technologies, Intercounty Alarm, DMI Security Services, Ever-Ready, Eastec, FBS Security, Flashback, Inc., APB Security Systems, Deterrent Technologies, APS Security, Aurora Home Systems, Stereo & Media Consultants, Inc., And Jaymer Communications Corporation.
- July 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Carbon Monoxide Design & Installation, Teaneck, New Jersey. Topics: Detection And Annunciation Of The Presence Of Carbon Monoxide, Evacuation Of Premises, Notification Of Authorities, UL Standards For Carbon Monoxide Sensors, UL 2034, UL 2075, Detection Principles Of Carbon Monoxide Sensors, Causes Of Carbon Monoxide, Equipment Manufacturer's Specifications, Detection Thresholds For Alarm Activation In Parts Per Million (PPM), Exposure Affects, Installation And Testing, Location And Placement Of Carbon Monoxide Sensors, Minimum Standards For The Installation Of Carbon Monoxide Sensors In Protected Premises, Functional And Exposure Testing Of Carbon Monoxide Sensors, Functional And Reliable Life Expectancy Of Carbon Monoxide Sensors And Circuit, Power, And Initiating Device Supervision And Annunciation. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Prism Electronics, Inc., Carbone Security, Leading Edge Technology Services, LLC, Perfect Security Systems, Han Kook Security, Inc., Falcon Engineered Systems, LLC, Stereo & Media Consultants, Inc., Primus Electronics, LLC, Electronic Security Systems, And Quality Alarm Company.
- July 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, NFPA 72®-The National Fire Alarm Code®, Teaneck, New Jersey. Topics: Understanding NFPA 72®, Navigating Through NFPA 72®, Plans, Permits And Submittals, The Authority Having Jurisdiction (AHJ), Definitions, Fundamentals Of Fire Alarm Systems, Application, Purpose, Equipment, Personnel, System Fundamentals, Documentation, Impairments, Mass Notification Systems, Appliances, Purpose, Performance Based Design, General Requirements, Requirements For Smoke And Heat Detectors, Heat-Sensing Fire Detectors, Smoke-Sensing Fire Detectors, Radiant Energy-Sensing Fire Detectors, Combinations, Multi-Criteria And Multi-Sensor Detectors, Other Fire Detectors, Sprinkler Waterflow Alarm-Initiating Devices, Supervisory Signal-Initiating Devices, Smoke Detectors For Control Of Smoke Spread, Mass Notification Systems, Notification Appliances For Fire Alarm Systems, Application, Purpose, Audible Characteristics, Visible Characteristics-Public Mode And Private Mode, Supplementary Visible Signaling

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Method, Textual Audible Appliances, Textual Visible Appliances, Tactile Appliances, Standard Emergency Service Interface, Mass Notification Systems, Supervising Station Fire Alarm Systems, Fire Alarm Systems Or Central Station Service, Proprietary Supervising Station, Remote Supervising Station Fire Alarm Systems, Communications Methods For Supervising Station Fire Alarm Systems, Mass Notification Systems, Inspection, Testing, Maintenance, Single And Multiple Station Alarms And Household Fire Alarm Systems, Basic Requirements, Assumptions, Detection And Notification, Power Supplies, Equipment Performance, Installation, Optional Functions, Maintenance And Tests, Markings And Instructions. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Prism Electronics, Inc., Carbone Security, Leading Edge Technology Services, LLC, Perfect Security Systems, Han Kook Security, Inc., Falcon Engineered Systems, LLC, Stereo & Media Consultants, Inc., Primus Electronics, LLC, Electronic Security Systems, And Quality Alarm Company.

- July 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Smoke Detectors-The Science Of Automatic Detection, Teaneck, New Jersey. Topics: Fire Science, Smoke Detector Operations And Functionality, Hardwired And Wireless Smoke Detectors, The Visible And Invisible Particles Of Combustion: Understanding The Micron, Smoldering Fires Vs. Fast Flaming Fires, Environmental Limitations Of Smoke Detectors, Technical Limitations Of Smoke Detectors, The Four Stages Of A Fire, Obscuration, Stratification, Equipment Manufacturers Specifications, NFPA, Codes And Standards, Quantifying The Reliability Of Smoke Detectors, UL Standard 217, UL Standard 268, UL Standard 985, UL Standard 864, NFPA 72® The National Fire Alarm Code®, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction (AHJ), International Residential Code (IRC), To Intentionally Exceed Fire Code Requirements Or Not, The Functional And Reliable Life Expectancy Of Smoke Detectors, Placement And Spacing, Different Types Of Smoke Detectors And Smoke Detection Systems, Two-Wire Smoke Detectors, Cross Listing Compatibility, Four Wire Smoke Detectors, Beam Detectors, Duct Detectors, Conventional Smoke Detection Systems, Addressable Smoke Detection Systems, Analog Addressable Smoke Detection Systems, Types Of Smoke Detection Coverage, Emerging Smoke Detection Technologies, Inspection, Testing And Maintenance Of Smoke Detectors, The Proper Methodology For Testing, Inspection And Maintenance, Identification Of Defects And Irregularities In Design, Recommendation, Application, Installation, Placement, Testing, Inspection, Maintenance, Repair And Monitoring Of Smoke Detectors, Functional Vs. Sensitivity Testing, Inherent Safeguards, Power Supervision Relays, End Of Line Resistor Supervision, Dangers And Hazards, Remote Momentary Of Toggle Reset Switch, T-Tapping, Special Applications Where Smoke Detectors Shall Be Installed And/Or Where The Occupancy Is Intrinsically Safe And Case Studies Where Fire Alarm Systems Failed And The Reasons Why. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Open Systems Integrators, Inc., Jaymer Communications Corporation, Sirina Protection Systems Corporation, Falcon Engineered Systems, LLC, T.F.L Electrical, Inc., Firmus Electronics, LLC, Sound Security Systems, Inc., Stereo & Media Consultants, Inc., Fire & Security Specialists, Inc., Superior Security Systems, LLC, Leading Edge Technology Services, LLC, Radar Security Systems, Inc., Open Systems Integrators, Inc., Homeguard, Inc., Amerigard Alarm & Security Corporation, Quality Alarm Company, US Security And Sound, Inc., Aggressive Home Automation & Design, Inc., United Burglar Alarm, Inc., Carbone Security, And Sokoly Alarms.
- July 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Industrial Safety: NFPA 70 E Safety In The Work Place, Teaneck, New Jersey. Topics: History, NFPA, NEC & OSHA, Definitions, NFPA-70 E 2009, Labeling, Safety Program, Approach Boundaries, Arch Flash Boundaries, PPE Requirements, Safety Related Work Practices, Responsible Parties, Relationship With Contractors, Training Requirements, Electrical Safety Programs, Awareness And Self-Discipline, Program Principles, Program Controls, Program Procedures, Hazard/Risk Evaluation, Job Briefing, And Electrical Safety Auditing. Participants: New Jersey Burglar And/Or Fire Alarm License Holders

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From The Following Companies: Open Systems Integrators, Inc., Jaymer Communications Corporation, Sirina Protection Systems Corporation, Falcon Engineered Systems, LLC, T.F.L Electrical, Inc., Firmus Electronics, LLC, Sound Security Systems, Inc., Stereo & Media Consultants, Inc., Fire & Security Specialists, Inc., Superior Security Systems, LLC, Leading Edge Technology Services, LLC, Radar Security Systems, Inc., Open Systems Integrators, Inc., Homeguard, Inc., Amerigard Alarm & Security Corporation, Quality Alarm Company, US Security And Sound, Inc., Aggressive Home Automation & Design, Inc., United Burglar Alarm, Inc., Carbone Security, And Sokoly Alarms.

- July 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Barrier Free, New Jersey Uniform Construction Code & The ADA, Teaneck, New Jersey. Topics: Barrier Free Subcode, 5:23-7.1 Applicability, 5:23-7.2 Accessibility Standard, 5:23-7.4 Non-Residential Buildings And Buildings Of Use Group R-1, 5:23-7.5 Residential Buildings Other Than Group R-1, 5:23-7.11 Requirements Applicable To Specific Non-Residential Groups And Group R-1, 5:23-7.12 Requirements Applicable To All Non-Residential Groups, Including Spaces Other Than Guestrooms In Use Group R-1 And 5:23-7.13 Existing Facilities. New Jersey Uniform Construction Code, Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections, 5:23-2.21 Construction Control, 5:23-2.23 Certificate Requirements, Subchapter 3: Subcodes, 5:23-3.6: Standards; Accepted Practice, 5:23-3.8 Products Violating The Code, Subchapter 5: Licensing, 5:23-5.3 Types Of Licenses, Subchapter 6: Rehabilitation Subcode, 5:23-6.2 Applicability And Compliance, 5:23-6.3 Definitions, 5:23-6.4 Repairs, 5:23-6.5 Renovations, 5:23-6.6 Alterations, 5:23-6.7 Reconstruction, And 5:23-6.8 Materials And Method. Americans With Disabilities Act: What Is It?, Definition Of Facility, The Difference Between Commercial Facilities And Public Accommodation, Americans With Disabilities ACT (ADA) Requirements And NFPA 72®, ADA Accessibility Guidelines For Building And Facilities (ADAAG), ADAAG In Comparison To DOJ Standards For Accessible Design And The International Building Code, Manual Pull Stations, Audible Warning Devices: Horns & Speakers, Visual Warning Devices: Strobe Lights, Activating A Manual Fire Alarm Box Requirements, And Emergency Call Systems: Supervised Sprinkler Systems. Participants: New Jersey Burglar And/OR Fire Alarm License Holders From The Following Companies: Open Systems Integrators, Inc., Jaymer Communications Corporation, Sirina Protection Systems Corporation, Falcon Engineered Systems, LLC, T.F.L Electrical, Inc., Firmus Electronics, LLC, Sound Security Systems, Inc., Stereo & Media Consultants, Inc., Fire & Security Specialists, Inc., Superior Security Systems, LLC, Leading Edge Technology Services, LLC, Radar Security Systems, Inc., Open Systems Integrators, Inc., Homeguard, Inc., Amerigard Alarm & Security Corporation, Quality Alarm Company, US Security And Sound, Inc., Aggressive Home Automation & Design, Inc., United Burglar Alarm, Inc., Carbone Security, And Sokoly Alarms.
- June 2010, Instructor, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, Metrotech Center, JP Morgan Chase, Brooklyn, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security,

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Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures. Participants: Police Officers And Sergeants From The 13th, 34th, 41st, 52nd, 75th, 101st, 102nd, 108th, 110th, 111th, 112th, 114th, And 115th Precincts, Police Officers From PSA 1, 3, 4, 6, 7, And 8, Police Officers From TD 11, 12, 23, And 34, And Deputies From The US Marshals Office.

- June 2010, Instructor, Ways To Help Minimize Your Liability, When Providing Central Station Monitoring Services, Electronic Security Expo (ESX), Pittsburgh, Pennsylvania. Is Your Central Station Taking The Steps Necessary To Minimize Your Liability In The Event Of Loss? This Presentation Will Focus On Procedures And Policies You Should Implement Within Your Central Station. Also Discussed Will Be Training, Response Protocols And Documentation. Topics: Anatomy Of A Lawsuit, Theories Of Liability, New Installations, Takeovers, Connecting To Existing Systems, Service Calls, Programming Features, Recommendations, Life Safety Systems And Company Documentation. Participants: Owners, General Management, Operations/Technical Management, Central Station Managements, Sales And Marketing Management, Top Technical, Central Station And Sales And Marketing Staff From Security Integration/Installation Companies With Central Stations, Security Integration/Installation Companies Without Central Stations, Non-Installing Central Stations, Security Consultants, Other Security Installing And Contracting Companies And Security Products Distributors And Representatives.
- June 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Alarm Science, Teaneck, New Jersey. Topics: Analysis And Technical Overview Of Alarm Science, Equipment Manufacturer's Specifications, UL Standards And Nationally Recognized Industry Standards And Practices, Duties Of An Alarm Contractor, The 25 Principles Of Alarm Science, Identification Of Defects And Irregularities In Alarm System Design, Application, Installation, Programming, Service, Inspection, Maintenance, Testing, And Monitoring, Existing Systems, Takeovers, Liability, Policies, Procedures, Customs And Habits And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Homeguard, Inc., Carbone Security, APS Security, Statewide Monitoring, Kriebel Security, Inc., Integrated Security, Solutions, Radar Security, Stereo & Media Consultants, Incorporated, Intruder Alert Alarms, Electronic Security, Systems, Incorporated, National Security Systems, Incorporated, Quality Alarm Company, Security Products Systems, Consolidated Fire Protection Systems, Incorporated, APB Security Systems, Leading Edge Technology Services, LLC, Absolute Security, Inc., US Security & Sound, And Spark Security & Electronics, Inc.
- June 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Fire Alarm Signaling Systems, Teaneck, New Jersey. Topics: Establishing Fire Protection Goals And Understanding Fire Signatures, Choosing A Fire Alarm System, Establishing Fire Protection Goals, Life Safety, Property Protection, Mission Protection, Heritage Preservation, Environmental Protection, Fire Signature Fundamentals, Aerosol (Smoke) Signatures, Energy Release Signatures, Gas Signatures, Fatality Potential For Fire Signatures, Effects Of Aerosols, Heat, Toxic Gases, Oxygen Depletion, Additive And Synergistic Effects Of Toxic Materials, Understanding The Limitations Of A Fire Alarm System, Fire Alarm System Overview, Description Of A Fire Alarm System, Types Of Systems, Protected Premises (Local) Fire Alarm Systems, Auxiliary Fire Alarm Systems, Remote-Station Fire Alarm System, Proprietary Fire Alarm System, Central Station Fire Alarm Systems, Emergency-Voice/Alarm Communications Systems, Signal Processing, Types Of Signals Processed, Manual Fire Alarm Signals, Automatic Fire Alarm Signals, Types Of Processing, Guards Tour Supervisory Service, Sprinkler System Waterflow Alarm And Supervisory Signal Service, Trouble Signals, Matching System Type With Fire Protection Goals, Fire Alarm System Components And Circuits, Fire Alarm Control Units, Conventional Fire Alarm Control Units, Addressable Fire Alarm Control Units, Addressable/Analog Fire Alarm Control Units, Power Supply Requirements For Fire Alarm System, Primary (Main Power Supply), Secondary (Standby)

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Power Supply, Trouble-Signal Power Supply, Notification Appliance Power Supplies, Supervision Of Power Supplies, System Circuits And Equipment, Power Supply Supervision, System Circuit Supervision, Equipment Supervision, Remote-Station Fire Alarm System, Addressable Alarm Initiating Devices, Analog Alarm Initiating Devices, Non-Supervised Parts Of Fire Alarm Systems, Signal Initiations, Alarm Initiating Devices, General Requirements For Manual Stations: Mounting And Distribution, Manual Fire Alarm Boxes, Automatic Fire Detectors, Alarm Systems And Fire Extinguishing System, Functions Of Alarm And Supervisory Signals, Waterflow Alarm And Supervisory Signal Service, Pressure-Actuated Alarm Switches, Other Supervisory Devices, Guard's Tour Supervisory Service, Signal Transmission Methods And Processing, Wire Transmission, Conventional Detectors, Addressable Detectors, Multiplexing, Analog Data Transmission, Wireless Transmission, Central Station Systems, Local Systems, Remote-Station Systems And Proprietary Systems, Public Fire Service Communication Systems, Coded Radio Reporting Systems, Radio Dispatch Systems, Optical Fiber Transmission, Principles Of Fiber Optics, Fiber Cable, Fiber Optic Circuits, Fiber Optic Connectors, Fiber Optic Attenuation, Signal Transmission Compatibility, Signal Verification Versus False Alarms, False Alarm Reduction In Equipment, False Alarm Reduction In The Field, Signal Processing, Types Of Signals Processed, Types Of Processing, Fire Alarm Notification, Notification Methods, Fire Alarm Notification Signals, Distinctive Signals, Trouble Signals, Visual Zone Alarm Indication, Classification Of Notification Signals, Noncoded, Coded Or Textual Signals, Public And Private Operating Modes, Audible And Visible Characteristics, Signal Notification In Combination Systems, Common Wiring, Use Of Speakers, Signal Notification Operation, Audible Signal Characteristics, Visible Signal Characteristics, Physically Or Mentally Challenged Individuals, ADA, Residential Alarm Appliances For The Hearing Impaired, Notification Appliance Types, Audible Alarm Notification Appliances, Visible Notification Appliances, Combination Audible And Visible Notification Appliances, Permanent And Print Recorders, Textual Notification Appliances, Emergency Voice/Alarm Communications Systems, Voice/Alarm Communications Service, Multichannel Capability, Functional Sequence, Voice And Tone Devices, Voice/Alarm Communication System Components, Voice Communication Messages And Signals, Loudspeakers, Fire Command Station, Monitoring Integrity Of Conductors And Survivability, Combination Systems, Two-Way Telephone Communication Service, Emergency Controls, Location, Elevator Recall, Release Of Automatic Door Closers, Activation Of Mechanical And Ventilation Systems, Smoke Management, Automatic Shutdown, Smoke Dampers, Automatic Fire Extinguishing Equipment, Emergency Lighting, Unlocking Of Doors, Special Lock Arrangements, Emergency Shutoff, And Signal Notification In High-Rise Buildings. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Prism Electronics, Carbone Security, APS Security, Statewide Monitoring, Kriebel Security, Inc., Integrated Security, Solutions, Radar Security, Stereo & Media Consultants, Incorporated, Intruder Alert Alarms, Electronic Security, Systems, Incorporated, National Security Systems, Incorporated, Quality Alarm Company, Security Products Systems, Consolidated Fire Protection Systems, Incorporated, APB Security Systems, Leading Edge Technology Services, LLC, East Coast Security Systems, Q.A.L. Security Systems, Fire Protection Industries, Integrated Security Solutions, Inc., US Security & Sound, Absolute Security, Inc., And Spark Security & Electronics, Inc.

- June 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Designing Fire Alarm Systems, Teaneck, New Jersey. Topics: Fire Alarm System Design Fundamentals, Overview Of Fire Alarm Systems, Codes And Standards Applicable To Fire Alarm System Design, Initiating Devices, Notification Appliances, Suppression Supervisory Equipment, Integration With Other Building Systems, Integration With Other Building Systems, Fire Alarm Control Unit (FACU), The Input-Output Matrix, UL, Detector Types, Detector Selection, Detection System Cost, Predominant Application, Detection Speed, Fire Alarm Control Units, Fire Alarm Power Supplies, Photoelectronic Smoke Detector, Ionization Smoke Detection, Heat Detectors, Visual Alarms, Wiring Types, Case Studies, And Fire Alarm System Science, Industry Standards, Recognized Practices And Standards Of The Technical Community Of The Fire Alarm Industry. Participants: New Jersey Burglar And/Or Fire Alarm

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License Holders From The Following Companies: Integrated Security Solutions, Inc., East Coast Security Systems, Inc., Security Product Systems, Integrated Systems & Power Inc., B&R Systems, LLC, National Security Systems, Quality Alarm Company, Gold Protective Services, Inc., Q.A.L. Security Systems, And Schneider Electric.

- June 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Industrial Safety: NFPA 70e Safety In The Workplace, Teaneck, New Jersey. Topics: History, NFPA, NEC & OSHA, Definitions, NFPA-70 E 2009, Labeling, Safety Program, Approach Boundaries, Arch Flash Boundaries, PPE Requirements, Safety Related Work Practices, Responsible Parties, Relationship With Contractors, Training Requirements, Electrical Safety Programs, Awareness And Self-Discipline, Program Principles, Program Controls, Program Procedures, Hazard/Risk Evaluation, Job Briefing, And Electrical Safety Auditing. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: East Coast Security Systems, Inc., Security Product Systems, Integrated Systems & Power, Inc. B&R Systems, LLC, Q.A.L. Security Systems, And Schneider Electric.
- May 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Understanding The Fire Protection Handbook, Teaneck, New Jersey. Topics: Applying The Fire Protection Handbook To The Design, Application, Recommendations, Installation, Programming, Service, Maintenance, And Monitoring Of Fire Alarm And Life Safety Systems, Basics Of Fire And Fire Science, Americas Fire Problem And Fire Protection, Fundamentals Of Fire Safety Building Design, System Concepts For Building Safety, Building And Fire Codes And Standards, Chemistry And Physics Of Fire, Explosions, Dynamics Of Compartment Fire Growth, Theory Of Fire Extinguishment, Environmental Issues In Fire Protection, Fire And Life Safety Education, Fire And Life Safety Education: The State Of The Art, Using Data For Public Education Decision Making, Designing Disaster Education Programs, Fire And Life Safety Education: Theory And Techniques, Reaching High-Risk Groups, Fire Prevention, Electrical Systems And Appliances, Control Of Electrostatic Ignition Sources, Lightning Protection Systems, Emergency And Standby Power Supplies, Heating Systems And Appliances, Boiler-Furnaces, Industrial And Commercial Heat Utilization Equipment, Materials, Products, And Environments, Fire Hazards Of Materials, Combustion Products And Their Effects On Life Safety, Detection And Alarm, Fire Alarm Systems, Automatic Fire Detectors, Notification Appliances, Household Fire Warning Equipment, Gas And Vapor Detection Systems And Monitors, Suppression, Water And Water Additives For Fire Fighting, Water Storage Facilities And Suction Supplies, Fire Pumps, Theory Of Automatic Sprinkler Performance, Confining Fires, Building And Site Planning For Fire Safety, Building Construction, Confinement Of Fire In Buildings, Smoke Movement In Buildings, Evacuation Of Occupants, Human Behavior And Fire, Concepts Of Egress Design, System Approaches To Property Classes, Assessing Life Safety Buildings, Organizing For Fire Protection, Evaluation And Planning Of Public Fire Protection, Fire Prevention And Code Enforcement, Planning Fire Station Locations, Information And Analysis For Fire Protection, Fire And Arson Investigation, Fire Data Collection And Data Bases, Fire Risk Analysis, And Performance-Based Fire Codes And Standards. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: B-Secure, System Design Associates, APS Security, SEM Security Systems, Altronics Security, Kriebel Security, Homeland Security & Life Safety Systems, Minuteman Service Company, IRL Systems, Rutgers University, Sonia Security, Inter County Alarm, B& R Systems, LLC, Eastern Alarm & Signal, Company, Fire Protection Industries, D.N.E. Security Communications, Integrated Security Solutions, Inc., Comtec Systems, Inc., And Security Products Systems.
- May 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Burglar Alarm System Testing, Inspection & Maintenance, Teaneck, New Jersey. Topics: Identifying Defective And/Or Damaged Equipment, Repairing And/Or Replacing Defective And/Or Damaged Equipment, Identifying Changes In The Protected Premises That Can Affect Burglar Alarm System Performance And Reliability, Identifying System Defects And Irregularities And Providing Corrective Action Plan, Minimum Standards Relating To Testing Of Burglar Alarm Systems,

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Functional Testing Of Initiating Devices, Documenting Findings, Minimum Standards Relating To Inspection Of Burglar Alarm Systems, Utilizing Photography And/Or Videotaping In Burglar Alarm System Inspections, Documenting Findings And Appropriately Notifying Subscriber, Minimum Standards Relating To Maintaining Burglar Alarm Systems, Outdated Technologies, What To Do When The System Cannot Be Replaced With Like, Kind, And Quality Equipment, What To Do When The System Cannot Be Repaired and Case Studies: Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Central Security Corporation, B-Secure, Shore Alarm, LLC, Protect America, Inc., Quality Alarm Company, FBS Security Systems, Flashback, Inc., Fire Protection Industries, Schneider Electric, Absolute Security, Inc., Security Products Systems, Rutgers University, Security Service, Company, SEM Security Systems, Security Headquarters, Shea Communications, And IRL Systems.

- May 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, The Alarm Technician: Policies Procedures, Customs, Habits, Training & Supervision, Teaneck, New Jersey. Topics: The Policies, Procedures, Customs, Habits, Training and Supervision Of Alarm Technicians, Understanding Ways To Address Liability, Minimization Techniques For The Alarm Technician Through The Company's Policies, Procedures, Customs, Habits Training And Supervision, Understanding Ways To Quantify An Alarm Technicians Effectiveness And Performance In The Tasks That They Perform And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Central Security Corporation, B-Secure, Shore Alarm, LLC, Protect America, Inc., Quality Alarm Company, FBS Security Systems, Flashback, Inc., Fire Protection Industries, Schneider Electric, Absolute Security, Inc., Security Products Systems, Rutgers University, Security Service Company, SEM Security Systems, And Jaymer Communications, Corporation.
- May 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Ambush, Holdup & Panic Alarm Systems, Teaneck, New Jersey. Topics: Understanding The Criticality And Purpose Of Ambush, Holdup And Panic Alarm Systems In Residential And Commercial Premises, Understanding And Applying UL 636-The Standard Of Safety For Holdup Alarm Units In Protected Premises, Understanding And Applying The Proper Design, Programming, Location, Installation, Testing And Monitoring Of Ambush, Holdup, And Panic Alarm Systems, Nationally Recognized Industry Standards And Practices, UL 636 Scope, Terminology, Normal Operation Test, Circuit Protection Test, Power Supply Test, Types of Remote Stations, Extent Of Protection, Bandit-Resisting Enclosure And Alarm, Semiautomatic-Alarm, Manual Alarm, Types Of Radio Frequency Operated Initiating Devices, Manufacturing And Production Tests, Marking, Accessory Equipment, Operation And Electrical Supervision, Power Supplies, Installation, Outside Cables, Wiring Inside Buildings, Maintenance, Standards For Components, Dual Action Vs. Single Action Initiating Devices, Design And Installation Of Holdup And Panic Alarms, The Security Survey, Threat Assessment, Type Of Risk, Accessibility, OSHA Standards Relating To High-Risk Robbery Environments, Industry Standards, Duties Of An Alarm Contractor When Recommending, Designing, Installing, Placing, Programming, Testing, Inspecting, And Monitoring Of Ambush, Holdup And Panic Alarm Systems, Installer Training, Subscriber Training, What The Perpetrator May Already Know About Panic And Holdup Alarm Systems-And How To Counter It, Ambush, Holdup And Panic Alarm Systems For Safes And Vaults, How To Ensure Functional, Technical, Operational And Monitoring Reliability Of Ambush, Holdup, And Panic Alarm Systems, The Crime Triangle And Criminality: Motive, Intent And Opportunity, And Forensic Case Studies Regarding Ambush, Holdup And Panic Alarm Systems. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Dunlap Electronic Security, BH Security, BH Security, Kriebel Security, Security Product Systems, Flashback, Inc., Knight Protective Systems, Top Security Locksmiths, Inc., Ingersoll Rand Security Technologies, Ocean Security Systems, Inc.

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- May 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Smoke Detectors-The Science of Automatic Detection, Teaneck, New Jersey. Topics: Fire Science, Smoke Detector Operations And Functionality, Hardwired And Wireless Smoke Detectors, The Visible And Invisible Particles Of Combustion: Understanding The Micron, Smoldering Fires Vs. Fast Flaming Fires, Environmental Limitations Of Smoke Detectors, Technical Limitations Of Smoke Detectors, The Four Stages Of A Fire, Obscuration, Stratification, Equipment Manufacturers Specifications, NFPA, Codes And Standards, Quantifying The Reliability Of Smoke Detectors, UL Standard 217, UL Standard 268, UL Standard 985, UL Standard 864, NFPA 72® The National Fire Alarm Code®, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction (AHJ), International Residential Code (IRC), To Intentionally Exceed Fire Code Requirements Or Not, The Functional And Reliable Life Expectancy Of Smoke Detectors, Placement And Spacing, Different Types Of Smoke Detectors And Smoke Detection Systems, Two-Wire Smoke Detectors, Cross Listing Compatibility, Four Wire Smoke Detectors, Beam Detectors, Duct Detectors, Conventional Smoke Detection Systems, Addressable Smoke Detection Systems, Analog Addressable Smoke Detection Systems, Types Of Smoke Detection Coverage, Emerging Smoke Detection Technologies, Inspection, Testing And Maintenance Of Smoke Detectors, The Proper Methodology For Testing, Inspection And Maintenance, Identification Of Defects And Irregularities In Design, Recommendation, Application, Installation, Placement, Testing, Inspection, Maintenance, Repair And Monitoring Of Smoke Detectors, Functional Vs. Sensitivity Testing, Inherent Safeguards, Power Supervision Relays, End Of Line Resistor Supervision, Dangers And Hazards, Remote Momentary Of Toggle Reset Switch, T-Tapping, Special Applications Where Smoke Detectors Shall Be Installed And/Or Where The Occupancy Is Intrinsically Safe And Case Studies Where Fire Alarm Systems Failed And The Reasons Why. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Dunlap Electronic Security, BH Security, BH Security, Kriebel Security, Security Product Systems, Flashback, Inc., Knight Protective Systems, Top Security Locksmiths, Inc., Ingersoll Rand Security Technologies, Ocean Security Systems, Inc., IRL Systems, Inc. And Minuteman Service Company.
- May 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Electronic Countermeasures To Highly Skilled & Other Types Of Burglary Circumvention Attacks, Teaneck, New Jersey. Topics: Methodologies To Defecting And Helping To Minimize Successful Circumvention Techniques To Disable Alarm Systems, Employing Sophisticated Countermeasures To Detect System Attacks, Understanding Ways To Help Lower Your Loss Potential When Designing, Installing And Monitoring High-Risk, High-Burglary Exposure Protected Premises, Types Of Occupancy, Assets To Be Protected, Physical Security Safeguards, Value Of Assets, Technology And System Options, And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Security Equipment Services, Incorporated, Schneider Electric, Shea Communications, BH Security, Gold Protective Systems, Charles Okun & Associates, Kriebel Security, Homeland Security & Life Safety Systems, Integrated Electronic Solutions, Service Works, Inc., Access Systems Integration, B-Secure, J.A.S.S. Security Systems, Fire Protection Industries, Prism Electronics, Inc., And US Security & Sound.
- May 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Understanding UL Certificated Systems & Standards, Teaneck, New Jersey. Topics: UL Certified System Requirements, Performance Based Standards, Equipment Manufacturer's Specifications, UL 681, UL 827. The Authority Having Jurisdiction, The UL Certificate, Becoming UL Listed, Maintaining Your UL Listing, Yearly Inspection, Defects Report, Service And Maintenance Obligations And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Security Equipment Services, Incorporated, Schneider Electric, Shea Communications, BH Security, Gold Protective Systems, Charles Okun & Associates, Kriebel Security, Homeland Security & Life Safety Systems, Integrated Electronic Solutions, Service Works, Inc., Access Systems Integration, B-Secure, J.A.S.S. Security Systems, And US Security & Sound.

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- April 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Commercial Security & Fire Alarm Systems, Teaneck, New Jersey. Topics: Minimization Of Loss, Proper Recommendation, Application, Installation, Service, Maintenance And Monitoring Of Commercial Security And Fire Alarm Systems, Existing Systems, Equipment Manufacturers Specification, Applicable UL Standards, NFPA Standards And Nationally Recognized Industry Standards And Practices, VOIP Dangers, Testing And Completion, Loss Potential, Detection Principles, Minimum Standards, Initiating Devices, Perimeter Vs. Motion Detection, Partial Perimeter Vs. Full Perimeter, Stay Shunting, Hardwired, Wireless And Hybrid Systems, Telephone Line Security Options, Smoke Detection, Heat Detection, Carbon Monoxide Detection, Gas Detection, Wet And Dry Sprinkler Systems, Exceeding Code Requirements And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies Schneider Electric, Security Equipment Services, Inc., Service Works, Inc., BH Security, FBS Security Systems, Flashback, Inc., Home Central LLC, Integrated Security Solutions, Inc., Fire Security Technologies, Gold Protective Systems, Shore Alarm LLC, And Carbone Security.
- April 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Telephone Line Security Methodologies, Teaneck, New Jersey. Topics: Detection And Remote Station Notification Of A Perpetrators Attempt To Cut The Protected Premises Telephone Lines In An Effort To Circumvent The Alarm System, Electronic Countermeasures Utilized For Circumvention Techniques To Disable An Alarm System By Either Cutting The Protected Premises Telephone Lines Or Attacking The Alarm System Equipment Itself, Or Both, Which Would Otherwise Not Be Detected By The Alarm System., Offering Enhanced Security And Monitoring Capabilities To Subscribers, Telephone Line Fault Monitor Options, Telephone Line Security Options, One Way Radio, Two Way Radio, Digital Cellular Radio, Derived Channel Technology, Internet Monitoring, Proper Installation Of Telephone Line Security, Equipment Manufacturer Specifications, UL Standards, Nationally Recognized Industry Standards And Practices, Telephone Line Fault Monitor, Remote Station Monitoring Of Telephone Line Security, Industry Standards Relating To The Monitoring And Dispatching Of Line Cut And/Or Communication Failure Conditions From Protected Premises, Handling Test Fail Conditions, Redundant Telephone Line Security Methodologies, And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Schneider Electric, Security Equipment Services, Inc., Service Works, Inc., BH Security, FBS Security Systems, Flashback, Inc., Home Central LLC, Integrated Security Solutions, Inc., Fire Security Technologies, Gold Protective Systems, Shore Alarm LLC, Prism Electronics, Inc., Fire Protection Industries, And Carbone Security.
- April 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, International Residential Code, Teaneck, New Jersey. Topics: Pertinent Sections Of The IRC For Burglar And Fire Alarm Contractors, Title, Scope, Purpose, Department Of Building Safety, Permits, Construction Documents, Temporary Structures And Uses, Fees, Inspections, Certificate Of Occupancy, Board Of Appeals, Violations, Stop Work Order, Definitions, Building Planning And Construction, Smoke Detection And Notification, NFPA 72®, Location, Alterations, Repairs, Additions, Exceptions, Power Source, Emergency Escape And Rescue Openings, Means Of Egress, Guards, Electrical Definitions, Branch, Circuit And Feeder Requirements, Branch Circuit Ratings, Conductor Sizing And Overcurrent Protection, Class 2 Remote-Control Signaling And Power-Limited Circuits, Power Sources, Wiring Methods, Installation Requirements, ICC International Residential Code Electrical Provisions, National Electrical Code Cross Reference And Fire Sprinkler Systems. Participants: Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Merchants Alarm Systems, Security World, Inc., Inc., Security Service Company, Rutgers University, Homeland Security & Life Safety Systems, Schneider Electric, Security Equipment Services, Inc., BH Security, And Carbone Security.
- April 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Smoke Detectors: The Science Of Automatic Detection, Teaneck, New Jersey. Topics: Fire Science, Smoke Detector Operations And Functionality, Hardwired And Wireless Smoke

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Detectors, The Visible And Invisible Particles Of Combustion: Understanding The Micron, Smoldering Fires Vs. Fast Flaming Fires, Environmental Limitations Of Smoke Detectors, Technical Limitations Of Smoke Detectors, The Four Stages Of A Fire, Obscuration, Stratification, Equipment Manufacturers Specifications, NFPA, Codes And Standards, Quantifying The Reliability Of Smoke Detectors, UL Standard 217, UL Standard 268, UL Standard 985, UL Standard 864, NFPA 72® The National Fire Alarm Code®, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction (AHJ), International Residential Code (IRC), To Intentionally Exceed Fire Code Requirements Or Not, The Functional And Reliable Life Expectancy Of Smoke Detectors, Placement And Spacing, Different Types Of Smoke Detectors And Smoke Detection Systems, Two-Wire Smoke Detectors, Cross Listing Compatibility, Four Wire Smoke Detectors, Beam Detectors, Duct Detectors, Conventional Smoke Detection Systems, Addressable Smoke Detection Systems, Analog Addressable Smoke Detection Systems, Types Of Smoke Detection Coverage, Emerging Smoke Detection Technologies, Inspection, Testing And Maintenance Of Smoke Detectors, The Proper Methodology For Testing, Inspection And Maintenance, Identification Of Defects And Irregularities In Design, Recommendation, Application, Installation, Placement, Testing, Inspection, Maintenance, Repair And Monitoring Of Smoke Detectors, Functional Vs. Sensitivity Testing, Inherent Safeguards, Power Supervision Relays, End Of Line Resistor Supervision, Dangers And Hazards, Remote Momentary Of Toggle Reset Switch, T-Tapping, Special Applications Where Smoke Detectors Shall Be Installed And/Or Where The Occupancy Is Intrinsically Safe And Case Studies Where Fire Alarm Systems Failed And The Reasons Why. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Merchants Alarm Systems, 1st Precinct Security, Security World, Inc., Prism Electronics, Inc., Security Service Company, Rutgers University, Homeland Security & Life Safety Systems, Schneider Electric, Security Equipment Services, Inc., BH Security, Integrated Systems And Carbone Security.

- April 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Barrier Free Subcode, New Jersey Uniform Construction Code & The ADA, Teaneck, New Jersey. Topics: Barrier Free Subcode, 5:23-7.1 Applicability, 5:23-7.2 Accessibility Standard, 5:23-7.4 Non-Residential Buildings And Buildings Of Use Group R-1, 5:23-7.5 Residential Buildings Other Than Group R-1, 5:23-7.11 Requirements Applicable To Specific Non-Residential Groups And Group R-1, 5:23-7.12 Requirements Applicable To All Non-Residential Groups, Including Spaces Other Than Guestrooms In Use Group R-1 And 5:23-7.13 Existing Facilities. New Jersey Uniform Construction Code, Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections, 5:23-2.21 Construction Control, 5:23-2.23 Certificate Requirements, Subchapter 3: Subcodes, 5:23-3.6: Standards; Accepted Practice, 5:23-3.8 Products Violating The Code, Subchapter 5: Licensing, 5:23-5.3 Types Of Licenses, Subchapter 6: Rehabilitation Subcode, 5:23-6.2 Applicability And Compliance, 5:23-6.3 Definitions, 5:23-6.4 Repairs, 5:23-6.5 Renovations, 5:23-6.6 Alterations, 5:23-6.7 Reconstruction, And 5:23-6.8 Materials And Method. Americans With Disabilities Act: What Is It?, Definition Of Facility, The Difference Between Commercial Facilities And Public Accommodation, Americans With Disabilities ACT (ADA) Requirements And NFPA 72®, ADA Accessibility Guidelines For Building And Facilities (ADAAG), ADAAG In Comparison To DOJ Standards For Accessible Design And The International Building Code, Manual Pull Stations, Audible Warning Devices: Horns & Speakers, Visual Warning Devices: Strobe Lights, Activating A Manual Fire Alarm Box Requirements, And Emergency Call Systems: Supervised Sprinkler Systems. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Jaymer Communications Corporation, Carbone Security, Fire Protection Industries, Security World, Inc., B&R Systems, LLC, Schneider Electric, Knight Protective Systems, 1st Precinct Security, Access Systems Integration, Flashback, Inc., Service Works, Inc., Merchants Alarm Systems, And Garcia Alarms.

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- April 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Identifying Defects And Irregularities In Security System Design, Installation, Application, Programming, Testing, Inspection, Service, Maintenance & Remote Station Monitoring, Teaneck, New Jersey. Topics: Types Of Defects And Irregularities, Proper Training And Supervision, Acquisitions, Existing Systems, Takeovers, System Testing And Inspection, Verification Of Expected System Performance, Documentation Of System Impairments, The Fact Pattern, Duty, Breach Of Duty, Proximate Cause, Damages, Hardwired, Wireless, Machine Wired Screens, Door Contacts, Shock Sensors, Motion Detectors, Audio Glassbreak Detectors, Smoke Detectors, Rate Of Rise Heat Detectors, Fire Thermostats, Panic And Holdup Buttons And Case Studies. New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Jaymer Communications Corporation, Carbone Security, Fire Protection Industries, Security World, Inc., B&R Systems, LLC, Schneider Electric, Knight Protective Systems, 1st Precinct Security, Access Systems Integration, Flashback, Inc., Service Works, Inc., Merchants Alarm Systems, And Garcia Alarms.
- March 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Carbon Monoxide Design & Installation, Teaneck, New Jersey. Topics: Detection And Annunciation Of The Presence Of Carbon Monoxide, Evacuation Of Premises, Notification Of Authorities, UL Standards For Carbon Monoxide Sensors, UL 2034, UL 2075, Detection Principles Of Carbon Monoxide Sensors, Causes Of Carbon Monoxide, Equipment Manufacturer's Specifications, Detection Thresholds For Alarm Activation In Parts Per Million (PPM), Exposure Affects, Installation And Testing, Location And Placement Of Carbon Monoxide Sensors, Minimum Standards For The Installation Of Carbon Monoxide Sensors In Protected Premises, Functional And Exposure Testing Of Carbon Monoxide Sensors, Functional And Reliable Life Expectancy Of Carbon Monoxide Sensors And Circuit, Power, And Initiating Device Supervision And Annunciation. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Digital Security Concepts, 1st Precinct Security, Carbone Security, DNE Security Comm., Sonia Security And Fire Security Technologies.
- March 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Fire Alarm System Testing, Inspection & Maintenance, Teaneck, New Jersey. Topics: System Reliability, Detection Capabilities, Repair And/Or Replacement Of System Impairments, Testing, Inspection And Maintenance Standards, NFPA 72®, The Authority Having Jurisdiction, Nationally Recognized Industry Standards And Practices, Fire Alarm System Performance Criteria, Equipment Manufacturer Specifications, Life Expectancy Of Different Types Of Initiating Detection Devices, Quantifying Performance Of Fire Alarm Systems, Documentation, Inspection And Testing Records, Acceptance Testing, Re-Acceptance Testing, Delegation Of Duty For Maintenance On Fire Alarm Systems, AHJ Notification On System Impairments, And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Digital Security Concepts, 1st Precinct Security, Carbone Security, DNE Security Comm., Sonia Security, D& W Central Station Fire Alarm Company, Inc., Integrated Systems And Power, Inc., Prism Electronics United Burglar Alarm, Inc., US Security & Sounds, And Fire Security Technologies.
- March 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Barrier Free Subcode, New Jersey Uniform Construction Code And Americans With Disabilities Act, Teaneck, New Jersey. Topics: Barrier Free Subcode, 5:23-7.1 Applicability, 5:23-7.2 Accessibility Standard, 5:23-7.4 Non-Residential Buildings And Buildings Of Use Group R-1, 5:23-7.5 Residential Buildings Other Than Group R-1, 5:23-7.11 Requirements Applicable To Specific Non-Residential Groups And Group R-1, 5:23-7.12 Requirements Applicable To All Non-Residential Groups, Including Spaces Other Than Guestrooms In Use Group R-1 And 5:23-7.13 Existing Facilities. New Jersey Uniform Construction Code, Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention,

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5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections, 5:23-2.21 Construction Control, 5:23-2.23 Certificate Requirements, Subchapter 3: Subcodes, 5:23-3.6: Standards; Accepted Practice, 5:23-3.8 Products Violating The Code, Subchapter 5: Licensing, 5:23-5.3 Types Of Licenses, Subchapter 6: Rehabilitation Subcode, 5:23-6.2 Applicability And Compliance, 5:23-6.3 Definitions, 5:23-6.4 Repairs, 5:23-6.5 Renovations, 5:23-6.6 Alterations, 5:23-6.7 Reconstruction, And 5:23-6.8 Materials And Method. Americans With Disabilities Act: What Is It?, Definition Of Facility, The Difference Between Commercial Facilities And Public Accommodation, Americans With Disabilities ACT (ADA) Requirements And NFPA 72®, ADA Accessibility Guidelines For Building And Facilities (ADAAG), ADAAG In Comparison To DOJ Standards For Accessible Design And The International Building Code, Manual Pull Stations, Audible Warning Devices: Horns & Speakers, Visual Warning Devices: Strobe Lights, Activating A Manual Fire Alarm Box Requirements, And Emergency Call Systems: Supervised Sprinkler Systems. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Spark Security, Connex Communications, Inc., Regency Telecom, Inc., P.E. Security, LLC, Integrated Systems & Power, Inc., Shea Communications, Franklin Central Communications, Sentinel Service, Prism Electronics, Benco Security, Inc., Sokoly Alarms, Lowitt Alarms, US Security & Sound, Inc., Systems Sales Corp., Franklin Central Communications, Security Service Company, Cati-Com Systems, ARM Security Systems Corporations, B-Secure, Integrated Electronic Solutions, Inc., P. E. Security, Integrated Electronic Solutions, Inc., And B& R Systems, LLC.

- March 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Commercial Security & Fire Alarm Systems, Teaneck, New Jersey. Topics: Minimization Of Loss, Proper Recommendation, Application, Installation, Service, Maintenance And Monitoring Of Commercial Security And Fire Alarm Systems, Existing Systems, Equipment Manufacturers Specification, Applicable UL Standards, NFPA Standards And Nationally Recognized Industry Standards And Practices, VOIP Dangers, Testing And Completion, Loss Potential, Detection Principles, Minimum Standards, Initiating Devices, Perimeter Vs. Motion Detection, Partial Perimeter Vs. Full Perimeter, Stay Shunting, Hardwired, Wireless And Hybrid Systems, Telephone Line Security Options, Smoke Detection, Heat Detection, Carbon Monoxide Detection, Gas Detection, Wet And Dry Sprinkler Systems, Exceeding Code Requirements And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Spark Security, Connex Communications, Inc., Regency Telecom, Inc., P.E. Security, LLC, Integrated Systems & Power, Inc., Shea Communications, Franklin Central Communications, Sentinel Service, Prism Electronics, Benco Security, Inc., Sokoly Alarms, Lowitt Alarms, US Security & Sound, Inc., Systems Sales Corp., Franklin Central Communications, Security Service Company, Cati-Com Systems, ARM Security Systems Corporations, B-Secure, Integrated Electronic Solutions, Inc., And B& R Systems, LLC.
- March 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Burglar Alarm System Testing, Inspection & Maintenance, Teaneck, New Jersey. Topics: Identifying Defective And/Or Damaged Equipment, Repairing And/Or Replacing Defective And/Or Damaged Equipment, Identifying Changes In The Protected Premises that Can Affect Burglar Alarm System Performance And Reliability, Identifying System Defects And Irregularities And Providing Corrective Action Plan, Minimum Standards Relating To Testing Of Burglar Alarm Systems, Functional Testing Of Initiating Devices, Documenting Findings, Minimum Standards Relating To Inspection Of Burglar Alarm Systems, Utilizing Photography And/Or Videotaping In Burglar Alarm System Inspections, Documenting Findings And Appropriately Notifying Subscriber, Minimum Standards Relating To Maintaining Burglar Alarm Systems, Outdated Technologies, What To Do When The System Cannot Be Replaced With Like, Kind, And Quality Equipment, What To Do When The System Cannot Be Repaired And Case Studies: Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Carbone Security, Electra Shield Alarm Company, Inc., FBS Security Systems, Integrated Electronic Solution,

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Sound Facets, LLC, Service Works, Inc., Red Alert Security Systems, SecureLimits Security Systems, LLC, 1st Precinct Security, Prism Electronics, Inc., B&R Systems and Eastern Alarm And Signal Company.

- March 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Electronic Countermeasures To Highly Skilled & Other Types Of Burglary Circumvention Attacks, Teaneck, New Jersey. Topics: Methodologies To Defecting And Helping To Minimize Successful Circumvention Techniques To Disable Alarm Systems, Employing Sophisticated Countermeasures To Detect System Attacks, Understanding Ways To Help Lower Your Loss Potential When Designing, Installing And Monitoring High-Risk, High-Burglary Exposure Protected Premises, Types Of Occupancy, Assets To Be Protected, Physical Security Safeguards, Value Of Assets, Technology And System Options, And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Carbone Security, Electra Shield Alarm Company, Inc., FBS Security Systems, Integrated Electronic Solution, Sound Facets, LLC, Service Works, Inc., Red Alert Security Systems, SecureLimits Security Systems, LLC, 1st Precinct Security, Prism Electronics, Inc., B&R Systems And Eastern Alarm And Signal Company.
- March 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, The Alarm Contractor: Policies, Procedures, Customs & Habits, Teaneck, New Jersey. Topics: The Policies, Procedures, Customs, And Habits Of Alarm Contractors, Ways To Minimize Liability When Alarm Contracting, Minimum Industry Standards, Dealing With High Risk Accounts, Advanced Documentation Methodologies, Case Studies, And System Impairments. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Secure Works, Inc., Integrated Electronic Solutions, Eastern Alarm & Signal Company, 1st Precinct Security, Q.A.L. Security Corporation, Red Alert Security Systems, B&R Systems, LLC, Prism Electronics, Inc., D.N.E. Security Communications, And Integrated Security Solutions, Inc.
- March 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For 2010 License Renewal, Existing Systems & Takeovers, Teaneck, New Jersey. Topics: Policies And Procedures When Connecting To Existing And Take Over Accounts That Your Company Did Not Design Or Install, Identifying Defects And Irregularities On Existing And Take Over Accounts, Documenting Services Provided To Help Minimize Liability, Documenting Services Not Being Provided To Help Minimize Liability, Offering Full System Inspections, Developing Policies And Procedures To Address Existing And Takeover Accounts So The Systems Reliability And Effectiveness Can Be Quantified, Common But Serious Mistakes And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Secure Works, Inc., United Burglar Alarm, Inc., Integrated Electronic Solutions, Eastern Alarm & Signal Company, 1st Precinct Security, Q.A.L. Security Corporation, Red Alert Security Systems, B&R Systems, LLC, Prism Electronics, Inc., D.N.E. Security Communications, And Integrated Security Solutions, Inc.
- March 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, The Alarm Technician: Policies, Procedures, Customs, Habits, Training & Supervision, Teaneck, New Jersey. Topics: The Policies, Procedures, Customs, Habits, Training And Supervision Of Alarm Technicians, Understanding Ways To Address Liability, Minimization Techniques For The Alarm Technician Through The Company's Policies, Procedures, Customs, Habits Training And Supervision, Understanding Ways To Quantify An Alarm Technicians Effectiveness And Performance In The Tasks That They Perform And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Secure Works, Inc., United Burglar Alarm, Inc., Integrated Electronic Solutions, Eastern Alarm & Signal Company, 1st Precinct Security, Q.A.L. Security Corporation, Red Alert Security Systems, B&R Systems, LLC, Prism Electronics, Inc., D.N.E. Security Communications, And Integrated Security Solutions, Inc.

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- February 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Security Surveys And Risk Analysis, Teaneck, New Jersey. Topics: Defining The Security Survey, How To Apply Security Surveys To Alarm Systems, Defining Risk Analysis, How To Apply Risk Analysis To Alarm Systems, The Crime Triangle-Recognizing Motive, Intent And Opportunity, CPTED-Crime Prevention Through Environmental Design, Techniques And Methodologies, Performing A Security Survey-What To Do, What Not To Do, And How To Help Make Sure That You Have Not Missed Anything, Foreseeability And Criticality, Quantifying Risk Analysis And Incorporating It Into The Security Survey, Applying The Crime Triangle Into The Security Survey-How To Help Break The Crime Triangle, Utilizing CPTED, Crime Prevention Through Environmental Design In The Security Survey And Risk Analysis Of The Subject Premises, Utilizing Either Passive, Active, Or Combination Methodologies, Written Reports And Recommendations, What To Say, What Not To Say, And How To Help Make Sure That Your Recommendations Are Not A One Size Fits All Approach. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Access Systems, Integration, D.N.E. Security Communications, Prism Electronics, Inc., TJ Security, LLC, Open Systems Integrators, Inc., Davis Alarms, Absolute Security, Inc., Integrated Systems & Services, Inc., US Security & Sounds, Inc., Security Equipment Services, Inc., BH Security, Inc., Red Alert Security Systems, Inc., Universal Security Systems, Inc., Integrated Systems & Services, Inc., T&R Alarm Systems, Inc., Eastern Alarm & Signal Company, And ISS Security Corporation.
- February 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Alarm Science, Teaneck, New Jersey. Topics: Analysis And Technical Overview Of Alarm Science, Equipment Manufacturer's Specifications, UL Standards And Nationally Recognized Industry Standards And Practices, Duties Of An Alarm Contractor, The 25 Principles Of Alarm Science, Identification Of Defects And Irregularities In Alarm System Design, Application, Installation, Programming, Service, Inspection, Maintenance, Testing, And Monitoring, Existing Systems, Takeovers, Liability, Policies, Procedures, Customs And Habits And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Q.A.L. Security Corporation, FBS Security Systems, Gold Protective Services, Access Systems, Integration, D.N.E. Security Communications, Prism Electronics, Inc., TJ Security, LLC, Open Systems Integrators, Inc., Davis Alarms, Absolute Security, Inc., Integrated Systems & Services, Inc., US Security & Sounds, Inc., Security Equipment Services, Inc., BH Security, Inc., Red Alert Security Systems, Inc., Universal Security Systems, Inc., Integrated Systems & Services, Inc., T&R Alarm Systems, Inc., Eastern Alarm & Signal Company, And ISS Security Corporation.
- February 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Ambush, Hold-Up And Panic Alarms, Teaneck, New Jersey. Topics: Understanding The Criticality And Purpose Of Ambush, Holdup And Panic Alarm Systems In Residential And Commercial Premises, Understanding And Applying UL 636-The Standard Of Safety For Holdup Alarm Units In Protected Premises, Understanding And Applying The Proper Design, Programming, Location, Installation, Testing And Monitoring Of Ambush, Holdup, And Panic Alarm Systems, Nationally Recognized Industry Standards And Practices, UL 636 Scope, Terminology, Normal Operation Test, Circuit Protection Test, Power Supply Test, Types Of Remote Stations, Extent Of Protection, Bandit-Resisting Enclosure And Alarm, Semiautomatic-Alarm, Manual Alarm, Types Of Radio Frequency Operated Initiating Devices, Manufacturing And Production Tests, Marking, Accessory Equipment, Operation And Electrical Supervision, Power Supplies, Installation, Outside Cables, Wiring Inside Buildings, Maintenance, Standards For Components, Dual Action Vs. Single Action Initiating Devices, Design And Installation Of Holdup And Panic Alarms, The Security Survey, Threat Assessment, Type Of Risk, Accessibility, OSHA Standards Relating To High-Risk Robbery Environments, Industry Standards, Duties Of An Alarm Contractor When Recommending, Designing, Installing, Placing, Programming, Testing, Inspecting, And Monitoring Of Ambush, Holdup And Panic Alarm Systems, Installer Training, Subscriber Training, What The Perpetrator

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May Already Know About Panic And Holdup Alarm Systems-And How To Counter It, Ambush, Holdup And Panic Alarm Systems For Safes And Vaults, How To Ensure Functional, Technical, Operational And Monitoring Reliability Of Ambush, Holdup, And Panic Alarm Systems, The Crime Triangle And Criminality: Motive, Intent And Opportunity, And Forensic Case Studies Regarding Ambush, Holdup And Panic Alarm Systems. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Prism Electronics, Inc., Sound-A-Vision, LLC, B&R Systems, LLC, Open Systems Integrators, Inc., Integrated Systems & Services, Inc., Sentinel Service, Gold Protective Services, US Security & Sounds, Inc., H&H Alarms, United Protective, Security Equipment Services, Inc., Red Alert Security Systems, Inc., Integrated Systems & Services, Inc., Shea Communications, B-Secure, Eastern Alarm & Signal Company, Integrated Systems And Power, Inc., Alier-3 Services And ISS Security Corporation.

- February 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Carbon Monoxide Design And Installation, Teaneck, New Jersey. Topics: Detection And Annunciation Of The Presence Of Carbon Monoxide, Evacuation Of Premises, Notification Of Authorities, UL Standards For Carbon Monoxide Sensors, UL 2034, UL 2075, Detection Principles Of Carbon Monoxide Sensors, Causes Of Carbon Monoxide, Equipment Manufacturer's Specifications, Detection Thresholds For Alarm Activation In Parts Per Million (PPM), Exposure Affects, Installation And Testing, Location And Placement Of Carbon Monoxide Sensors, Minimum Standards For The Installation Of Carbon Monoxide Sensors In Protected Premises, Functional And Exposure Testing Of Carbon Monoxide Sensors, Functional And Reliable Life Expectancy Of Carbon Monoxide Sensors And Circuit, Power, And Initiating Device Supervision And Annunciation. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Prism Electronics, Inc., Sound-A-Vision, LLC, B&R Systems, LLC, Open Systems Integrators, Inc., Integrated Systems & Services, Inc., Sentinel Service, Gold Protective Services, US Security & Sounds, Inc., H&H Alarms, United Protective, Security Equipment Services, Inc., Red Alert Security Systems, Inc., Integrated Systems & Services, Inc., Shea Communications, B-Secure, Eastern Alarm & Signal Company, Integrated Systems And Power, Inc., Alier-3 Services And ISS Security Corporation.
- January 2010, Instructor, New Jersey Burglar And Fire Alarm Association (NJBFAA) 2010 Annual Symposium, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, NFPA 72®: The National Fire Alarm Code®-2007 Edition, Atlantic City, New Jersey. Topics: Understanding NFPA 72®, Navigating Through NFPA 72®, Plans, Permits And Submittals, The Authority Having Jurisdiction (AHJ), Definitions, Fundamentals Of Fire Alarm Systems, Application, Purpose, Equipment, Personnel, System Fundamentals, Documentation, Impairments, Mass Notification Systems, Appliances, Purpose, Performance Based Design, General Requirements, Requirements For Smoke And Heat Detectors, Heat-Sensing Fire Detectors, Smoke-Sensing Fire Detectors, Radiant Energy-Sensing Fire Detectors, Combinations, Multi-Criteria And Multi-Sensor Detectors, Other Fire Detectors, Sprinkler Waterflow Alarm-Initiating Devices, Supervisory Signal-Initiating Devices, Smoke Detectors For Control Of Smoke Spread, Mass Notification Systems, Notification Appliances For Fire Alarm Systems, Application, Purpose, Audible Characteristics, Visible Characteristics-Public Mode And Private Mode, Supplementary Visible Signaling Method, Textual Audible Appliances, Textual Visible Appliances, Tactile Appliances, Standard Emergency Service Interface, Mass Notification Systems, Supervising Station Fire Alarm Systems, Fire Alarm Systems Or Central Station Service, Proprietary Supervising Station, Remote Supervising Station Fire Alarm Systems, Communications Methods For Supervising Station Fire Alarm Systems, Mass Notification Systems, Inspection, Testing, Maintenance, Single And Multiple Station Alarms And Household Fire Alarm Systems, Basic Requirements, Assumptions, Detection And Notification, Power Supplies, Equipment Performance, Installation, Optional Functions, Maintenance And Tests, Markings And Instructions. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Security Systems Unlimited, Berman Home Systems, FAA Security & Surveillance, G&C Electronics, Security Specialists, Ocean Security Systems, Home Systems Of NJ, Inc., Intruder Alert, FYR-FYTER Sales & Service, Inc, Russ Security Systems, Delta Safety Systems, Associated Installations, Inc., JW Kennedy Fire Protection

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LLC, Independent Alarm Distributors, Inc., King Security Systems, Inc., Security Plus, Inc., Automatic Communications Alarm Co., Inc., Shield Alarm Systems, Inc., Marshall Alarm Systems, Inc., Feel Safe Fire & Burglary, LLC, Independent Alarm Distributors, Inc., Alarmtronics, Inc., Advance Security Technologies, Inc., Security Control Alarm Co, Inc., PACE Communications Group, Inc., B-Safe Alarms, Inc., Rutkoski Security/ASG Security, Reliable Safety Systems, Inc., ASG Security, Haig Security Systems, AAS Security Systems, Northeast Security Systems, Inc., SMS Security Systems, LLC, HEIM Electronics, Inc., Independent Alarm Distributors, Inc., Elizabeth Board Of Education, Pro Video Engineering, And Weiss Distributors.

- January 2010, Instructor, New Jersey Burglar And Fire Alarm Association (NJBFAA) 2010 Annual Symposium, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Security Surveys And Risk Analysis, Atlantic City, New Jersey. Topics: Defining The Security Survey, How To Apply Security Surveys To Alarm Systems, Defining Risk Analysis, Hoe To Apply Risk Analysis To Alarm Systems, The Crime Triangle-Recognizing Motive, Intent And Opportunity, CPTED-Crime Prevention Through Environmental Design, Techniques And Methodologies, Performing A Security Survey-What To Do, What Not To Do, And How To Help Make Sure That You Have Not Missed Anything, Foreseeability And Criticality, Quantifying Risk Analysis And Incorporating It Into The Security Survey, Applying The Crime Triangle Into The Security Survey-How To Help Break The Crime Triangle, Utilizing CPTED, Crime Prevention Through Environmental Design In The Security Survey And Risk Analysis Of The Subject Premises, Utilizing Either Passive, Active, Or Combination Methodologies, Written Reports And Recommendations, What To Say, What Not To Say, And How To Help Make Sure That Your Recommendations Are Not A One Size Fits All Approach. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Ackerman Services, GA Dynamics Security Systems, Inc., BH Security, CB Security Systems, Inc., B-Com Group, LLC, Protection Plus Security Systems, LLC, Bergen Protective Systems, Inc., DABCO ASI, Automated Security Corp, ASG Security Dynamics, Inc., Evesham Security Technologies, Garden State Fire & Security, Scott's Security Systems, Integrated Systems & Services, Inc., Northstar Services, Inc., Kroll, Certified Protection Systems, Inc., American Security Systems, Inc., Certified Protection Systems, Inc., Automated Security Corp, Hughes Fire & Security Systems, Fire Security Technologies, Inc., Associated Installations, Inc., Homeguard Alarm System Systems, Inc., Independent Alarm Distributors, Inc., La Torre Electronic Systems, Comtec Systems, Inc., Elgin Security Systems, Inc., Maffey's Security Group, Michel Security, Feel-Safe Fire & Burglary, LLC, Trinity Security Services, LLC, B&H Security, Pro-Tek Security, Planer Protective, Security Control Alarm Company, Inc., Integrated Systems & Services, Inc., B-Safe Alarms, Inc., Rutkoski Security/ASG Security, Complete Security Systems, Inc., FBS Security Systems, Shepherd Security Systems, Inc., Alarm Service Company Of New Jersey, Triad Security Systems, Inc., Pro-Tek Security, Triad Security Systems, Inc., Independent Alarm Distributors, Inc., Fox Brothers Alarm Services, Inc., Elizabeth Board Of Education, Securall Monitoring Corporation, Pro Video Engineering, And Weiss Distributors, Incorporated.
- January 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, The National Electrical Code, Teaneck, New Jersey. Topics: Analysis And Technical Overview, Understanding And Applying The National Electrical Code In All Types Of Burglar, Fire Alarm And CCTV System Installations, Wiring Methods And Materials, Equipment For General Use, Special Occupancies, Divisions 1 And 2, Class I Locations, Class II Locations, Class III Locations, Intrinsically Safe Systems, NEC Tables, Article 725 Class 1, Class 2, And Class 3 Remote Control, Signaling, And Power Limited Circuits, Article 760: Fire Alarm Systems, Non-Power Limited Fire Alarms (NPLFA) Circuits, Power-Limited Fire Alarm (PLFA) Circuits, Optical Fiber Cables And Raceways, Overcurrent Protection, Location, Enclosures, Disconnecting, Grounding, Circuit And System Grounding, Grounding Electrode System And Electric Conductors, Enclosure, Raceway And Service Cable Grounding, Equipment Grounding, Methods Of Equipment Grounding, Direct Current Systems, Instruments, Meters And Relays, Surge Arrestors, Connecting Surge Arrestors, Ensuring NEC Compliance When Installing Burglar, Fire Alarm,

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And CCTV Systems, Common Errors In NEC Compliance And Checklists For Identification Of NEC Errors. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Lowitt Alarms, B&R Systems, LLC, Open Systems Integrators, Inc., D.N.E. Security Communications, Gold Protective Services, Integrated Systems And Power, Inc., US Security & Sounds, Inc., Simplex Grinnell, United Burglar Alarm, Inc., Red Alert Security Systems, Rutgers University, Universal Security Systems, Inc., AJR Security Systems, Inc., City Electric Company, E.T. Security Systems, Inc., Falcon Engineered Systems, LLC, Q.A.L. Security Corporation, And FBS Security Systems.

- January 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, International Residential Code, Teaneck, New Jersey. Topics: Understanding Pertinent Sections Of The International Residential Code For Burglar And Fire Alarm Contractors, Administration, Department Of Building Safety, Permits, Construction Documents, Temporary Structures And Uses, Fees, Inspections, Certificate Of Occupancy, Board Of Appeals, Violations, Stop Work Order, Definitions, Building Planning And Construction, Smoke Detection And Notification, NFPA 71, Location, Alterations, Repairs And Additions, Exceptions, Power Source, Emergency Escape And Rescue Openings, Means Of Egress, Guards, Electrical Definitions, Branch Circuit And Feeder Requirements, Conductor Sizing And Overcurrent Protection, Class 2 Remote-Control Signaling And Power-Limited Circuits, Installation Requirements, ICC International Residential Code Electrical Provisions, National Electrical Code Cross Reference And Fire Sprinkler Systems. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Lowitt Alarms, B&R Systems, LLC, Open Systems Integrators, Inc., D.N.E. Security Communications, Gold Protective Services, Integrated Systems And Power, Inc., US Security & Sounds, Inc., Simplex Grinnell, United Burglar Alarm, Inc., Red Alert Security Systems, Rutgers University, Universal Security Systems, Inc., AJR Security Systems, Inc., City Electric Company, E.T. Security Systems, Inc., Falcon Engineered Systems, LLC, Q.A.L. Security Corporation, And FBS Security Systems.
- January 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Barrier Free Subcode, New Jersey Uniform Construction Code And Americans With Disabilities Act, Teaneck, New Jersey. Topics: Barrier Free Subcode, 5:23-7.1 Applicability, 5:23-7.2 Accessibility Standard, 5:23-7.4 Non-Residential Buildings And Buildings Of Use Group R-1, 5:23-7.5 Residential Buildings Other Than Group R-1, 5:23-7.11 Requirements Applicable To Specific Non-Residential Groups And Group R-1, 5:23-7.12 Requirements Applicable To All Non-Residential \ Groups, Including Spaces Other Than Guestrooms In Use Group R-1 And 5:23-7.13 Existing Facilities. New Jersey Uniform Construction Code, Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections, 5:23-2.21 Construction Control, 5:23-2.23 Certificate Requirements, Subchapter 3: Subcodes, 5:23-3.6: Standards; Accepted Practice, 5:23-3.8 Products Violating The Code, Subchapter 5: Licensing, 5:23-5.3 Types Of Licenses, Subchapter 6: Rehabilitation Subcode, 5:23-6.2 Applicability And Compliance, 5:23-6.3 Definitions, 5:23-6.4 Repairs, 5:23-6.5 Renovations, 5:23-6.6 Alterations, 5:23-6.7 Reconstruction, And 5:23-6.8 Materials And Method. Americans With Disabilities Act: What Is It?, Definition Of Facility, The Difference Between Commercial Facilities And Public Accommodation, Americans With Disabilities ACT (ADA) Requirements And NFPA 72®, ADA Accessibility Guidelines For Building And Facilities (ADAAG), ADAAG In Comparison To DOJ Standards For Accessible Design And The International Building Code, Manual Pull Stations, Audible Warning Devices: Horns & Speakers, Visual Warning Devices: Strobe Lights, Activating A Manual Fire Alarm Box Requirements, And Emergency Call Systems: Supervised Sprinkler Systems. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: SECURELIMITS SECURITY SYSTEMS, LLC, Look Alarmed, Open Systems Integrators, Inc., Engineered Solutions, Corp., Protect America, Inc., Jersey Protective Services, Inc., H&H Alarms, Electra Shield Alarm

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Company, Inc., Vector Security, Inc., Universal Security Systems, Inc., Charles Okun & Associates, Inc., Sentry Safe Alarms, Inc., Advanced Video Surveillance, Inc., FBS Security Systems, Inc., Shepherd Security Systems, Inc., Triad Security, Oliver Alarms, ComTec Systems, Inc., High Technology Fire & Security Systems, Satellite Headquarters, D&W Central Station Fire Alarm Company, Bravante & Associates, Inc., Intruder Alert Security And Fire, Inc., D& W Central Station Fire Alarm Company, Statewide Security Services, Han Kook Security, Bounty Alarms, City Electric Company, Perfect Security Systems, Altec Security Inc., Command Corporation, B&R Systems And Superior Security Systems.

- January 2010, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Smoke Detectors: The Science Of Automatic Detection, Teaneck, New Jersey. Topics: Fire Science, Smoke Detector Operations And Functionality, Hardwired And Wireless Smoke Detectors, The Visible And Invisible Particles Of Combustion: Understanding The Micron, Smoldering Fires Vs. Fast Flaming Fires, Environmental Limitations Of Smoke Detectors, Technical Limitations Of Smoke Detectors, The Four Stages Of A Fire, Obscuration, Stratification, Equipment Manufacturers Specifications, NFPA, Codes And Standards, Quantifying The Reliability Of Smoke Detectors, UL Standard 217, UL Standard 268, UL Standard 985, UL Standard 864, NFPA 72® The National Fire Alarm Code®, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction (AHJ), International Residential Code (IRC), To Intentionally Exceed Fire Code Requirements Or Not, The Functional And Reliable Life Expectancy Of Smoke Detectors, Placement And Spacing, Different Types Of Smoke Detectors And Smoke Detection Systems, Two-Wire Smoke Detectors, Cross Listing Compatibility, Four Wire Smoke Detectors, Beam Detectors, Duct Detectors, Conventional Smoke Detection Systems, Addressable Smoke Detection Systems, Analog Addressable Smoke Detection Systems, Types Of Smoke Detection Coverage, Emerging Smoke Detection Technologies, Inspection, Testing And Maintenance Of Smoke Detectors, The Proper Methodology For Testing, Inspection And Maintenance, Identification Of Defects And Irregularities In Design, Recommendation, Application, Installation, Placement, Testing, Inspection, Maintenance, Repair And Monitoring Of Smoke Detectors, Functional Vs. Sensitivity Testing, Inherent Safeguards, Power Supervision Relays, End Of Line Resistor Supervision, Dangers And Hazards, Remote Momentary Of Toggle Reset Switch, T-Tapping, Special Applications Where Smoke Detectors Shall Be Installed And/Or Where The Occupancy Is Intrinsically Safe And Case Studies Where Fire Alarm Systems Failed And The Reasons Why. Participants: Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: SECURELIMITS SECURITY SYSTEMS, LLC, Look Alarmed, Open Systems Integrators, Inc., Engineered Solutions, Corp., Protect America, Inc., Jersey Protective Services, Inc., H&H Alarms, Electra Shield Alarm Company, Inc., Vector Security, Inc., Universal Security Systems, Inc., Charles Okun & Associates, Inc., Sentry Safe Alarms, Inc., Advanced Video Surveillance, Inc., FBS Security Systems, Inc., Shepherd Security Systems, Inc., Triad Security, Oliver Alarms, ComTec Systems, Inc., High Technology Fire & Security Systems, Satellite Headquarters, D&W Central Station Fire Alarm Company, Bravante & Associates, Inc., Intruder Alert Security and Fire, Inc., D& W Central Station Fire Alarm Company, Statewide Security Services, Han Kook Security, Bounty Alarms, City Electric Company, Perfect Security Systems, Altec Security Inc., Command Corporation And Superior Security Systems.
- December 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Barrier Free Subcode, New Jersey Uniform Construction Code And Americans With Disabilities Act, Teaneck, New Jersey. Topics: Barrier Free Subcode, 5:23-7.1 Applicability, 5:23-7.2 Accessibility Standard, 5:23-7.4 Non-Residential Buildings And Buildings Of Use Group R-1, 5:23-7.5 Residential Buildings Other Than Group R-1, 5:23-7.11 Requirements Applicable To Specific Non-Residential Groups And Group R-1, 5:23-7.12 Requirements Applicable To All Non-Residential Groups, Including Spaces Other Than Guestrooms In Use Group R-1 And 5:23-7.13 Existing Facilities. New Jersey Uniform Construction Code, Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9

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Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections, 5:23-2.21 Construction Control, 5:23-2.23 Certificate Requirements, Subchapter 3: Subcodes, 5:23-3.6: Standards Accepted Practice, 5:23-3.8 Products Violating The Code, Subchapter 5: Licensing, 5:23-5.3 Types Of Licenses, Subchapter 6: Rehabilitation Subcode, 5:23-6.2 Applicability And Compliance, 5:23-6.3 Definitions, 5:23-6.4 Repairs, 5:23-6.5 Renovations, 5:23-6.6 Alterations, 5:23-6.7 Reconstruction, And 5:23-6.8 Materials And Method. Americans With Disabilities Act: What Is It?, Definition Of Facility, The Difference Between Commercial Facilities And Public Accommodation, Americans With Disabilities ACT (ADA) Requirements And NFPA 72®, ADA Accessibility Guidelines For Building And Facilities (ADAAG), ADAAG In Comparison To DOJ Standards For Accessible Design And The International Building Code, Manual Pull Stations, Audible Warning Devices: Horns & Speakers, Visual Warning Devices: Strobe Lights, Activating A Manual Fire Alarm Box Requirements, And Emergency Call Systems: Supervised Sprinkler Systems. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Security Systems Plus, Security Net Protection Systems, Sound Facets LLC, Bevan Security Systems, Inc., Franklin Central Communications, D.N.E Security Communications, East Coast Security Systems, Inc., Integrated Electronic Solutions, Q.A.L. Security Corporation, A-1 Security, Inc., United Burglar Alarm, Inc., Intruder Alert Alarms, LLC, Sound Facets, LLC, Consolidated Security, Inc., Pannella Security Systems, Inc., Alert Line Security, E.T. Security Systems, Inc., The Alarm Doctor, Co., And Security Headquarters, Inc.

- November 2009, Instructor, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, Metrotech Center, JP Morgan Chase, Brooklyn, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures. Participants: Housing CAB Police Officers And Sergeants, Police Officers And Sergeants From The 6th, 9th, 13th, 17th, 19th, 28th, 32nd, 33rd, 44th, 63rd, 72nd, 88th, 101st, 108th And 110th Precincts, Police Officers And Detectives From The Monticello Police Department, Police Officers From SSD TF, Deputies From The US Marshal's Office, Police Officers From TD 11, Sergeants From The Bronx Community College, Police Officers From PAPD, Police Officers From TD 33, Police Officers From PSA 1, 8 And 9, Sergeants From SSD, Sergeants From BCPD, Detectives From Central Robbery Section, Sergeants From CAB, Detectives From INTEL Division And Police Officers From SSD Special Projects.
- November 2009, Instructor, Fraud, Subrogation & Lightning Claims, Advanced Investigations-Focus on Alarm Systems, Chubb Group of Insurance Companies, Whitehouse Station, New Jersey. Topics: Misconceptions About Alarm Contractor Liability, Duties Of An Alarm Contractor, Defeating Alarm Company Contracts, Common Defects Found In Residential And Commercial Fire Alarm Systems, Mission Critical Preservation Of All Alarm Equipment On Site And What The Evidence Reveals, Legal Theories Utilized Against Fire Alarm System Designers And Contractors, and Identifying Risk In Fire Alarm System Testing And Inspection. Participants: Property Special Investigations Unit Investigators.

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- November 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Barrier Free Subcode, New Jersey Uniform Construction Code And Americans With Disabilities Act, Vector Security, Incorporated, Lawrenceville, New Jersey. Topics: Barrier Free Subcode, 5:23-7.1 Applicability, 5:23-7.2 Accessibility Standard, 5:23-7.4 Non-Residential Buildings And Buildings Of Use Group R-1, 5:23-7.5 Residential Buildings Other Than Group R-1, 5:23-7.11 Requirements Applicable To Specific Non-Residential Groups And Group R-1, 5:23-7.12 Requirements Applicable To All Non-Residential Groups, Including Spaces Other Than Guestrooms In Use Group R-1 And 5:23-7.13 Existing Facilities. New Jersey Uniform Construction Code, Subchapter 2: Administration And Enforcement, 5:23-2.4 Alternations, Replacements And Damages, 5:23-2.7 Ordinary Maintenance, 5:23-2.8 Installation Of Equipment, 5:23-2.9 Variations And Exceptions, 5:23-2.14 Construction Permits (Requirements), 5:23-2.15A Records Retention, 5:23-2.17A Minor Work, 5:23-2.18 Inspections, 5:23-2.20 Tests And Special Inspections, 5:23-2.21 Construction Control, 5:23-2.23 Certificate Requirements, Subchapter 3: Subcodes, 5:23-3.6: Standards; Accepted Practice, 5:23-3.8 Products Violating The Code, Subchapter 5: Licensing, 5:23-5.3 Types Of Licenses, Subchapter 6: Rehabilitation Subcode, 5:23-6.2 Applicability And Compliance, 5:23-6.3 Definitions, 5:23-6.4 Repairs, 5:23-6.5 Renovations, 5:23-6.6 Alterations, 5:23-6.7 Reconstruction, And 5:23-6.8 Materials And Method. Americans With Disabilities Act: What Is It?, Definition Of Facility, The Difference Between Commercial Facilities And Public Accommodation, Americans With Disabilities ACT (ADA) Requirements And NFPA 72®, ADA Accessibility Guidelines For Building And Facilities (ADAAG), ADAAG In Comparison To DOJ Standards For Accessible Design And The International Building Code, Manual Pull Stations, Audible Warning Devices: Horns & Speakers, Visual Warning Devices: Strobe Lights, Activating A Manual Fire Alarm Box Requirements, And Emergency Call Systems: Supervised Sprinkler Systems. Participants: New Jersey Burglar And/Or Fire Alarm License Holders For Vector Security, Incorporated.
- November 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Smoke Detectors: The Science Of Automatic Detection, Vector Security, Incorporated, Lawrenceville, New Jersey. Topics: Fire Science, Smoke Detector Operations And Functionality, Hardwired And Wireless Smoke Detectors, The Visible And Invisible Particles Of Combustion: Understanding The Micron, Smoldering Fires Vs. Fast Flaming Fires, Environmental Limitations Of Smoke Detectors, Technical Limitations Of Smoke Detectors, The Four Stages Of A Fire, Obscuration, Stratification, Equipment Manufacturers Specifications, NFPA, Codes And Standards, Quantifying The Reliability Of Smoke Detectors, UL Standard 217, UL Standard 268, UL Standard 985, UL Standard 864, NFPA 72® The National Fire Alarm Code®, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction (AHJ), International Residential Code (IRC), To Intentionally Exceed Fire Code Requirements Or Not, The Functional And Reliable Life Expectancy Of Smoke Detectors, Placement And Spacing, Different Types Of Smoke Detectors And Smoke Detection Systems, Two-Wire Smoke Detectors, Cross Listing Compatibility, Four Wire Smoke Detectors, Beam Detectors, Duct Detectors, Conventional Smoke Detection Systems, Addressable Smoke Detection Systems, Analog Addressable Smoke Detection Systems, Types Of Smoke Detection Coverage, Emerging Smoke Detection Technologies, Inspection, Testing And Maintenance Of Smoke Detectors, The Proper Methodology For Testing, Inspection And Maintenance, Identification Of Defects And Irregularities In Design, Recommendation, Application, Installation, Placement, Testing, Inspection, Maintenance, Repair And Monitoring Of Smoke Detectors, Functional Vs. Sensitivity Testing, Inherent Safeguards, Power Supervision Relays, End Of Line Resistor Supervision, Dangers And Hazards, Remote Momentary Of Toggle Reset Switch, T-Tapping, Special Applications Where Smoke Detectors Shall Be Installed And/Or Where The Occupancy Is Intrinsically Safe And Case Studies Where Fire Alarm Systems Failed And The Reasons Why. Participants: New Jersey Burglar And/Or Fire Alarm License Holders For Vector Security, Incorporated.

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- October 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Overt & Covert CCTV Systems, Teaneck, New Jersey. Topics: Proper Design And Installation Of CCTV Systems, Understanding The Differences Between Overt And Covert CCTV Systems, Liability Concerns When Installing CCTV Systems, Types Of Occupancies, Lighting, Security Concerns, Vandalism, Prior Loss History, Purpose Of System, Expectation Of Privacy, Equipment Manufacturer's Specifications, Onsite Surveillance, Remote View, DVR Technologies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Sovereign Signal Systems, Triad Security Systems, Feldman Brothers Electrical Supply Company, ALTEC Electronic Systems, Security Controls Concepts & Designs, Inc., A.J.R. Security Systems, Inc., United Burglar Alarm, Inc., A-1 Security, Inc., Integrated Systems & Services, RR Concepts, Inc., ALTEC Electronic Systems, Consolidated Security, Inc., H&H Alarms, East Coast Security Systems, The Alarm Doctor, Co., C.W. Security Service, Northeast Security Systems, Inc., E.T. Security Systems, Inc., Advanced Video Surveillance, Inc., William R. Kelly Associates, Inc., Fortress Protection, LLC, Engineered Solutions Corp., Altronics, Inc., Open Systems Integrators, Inc., Ranger Security, Inc., Sound Facets, LLC, B&R Systems, LLC, Integrated Electronic Solutions, Inc., Gold Protective Systems, Inc., Homeguard Alarm Systems, Inc., National Security, Inc., Q.A.L. Security Corp., And D.N.E. Security Communications.
- October 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Residential Security & Fire Alarm Systems, Teaneck, New Jersey. Topics: Detection, Deterrence, Annunciation And Notification, Minimization Of Loss, Proper Recommendation, Application, Installation, Service, Maintenance And Monitoring Of Residential Security And Fire Alarm Systems, Existing Residential Security And Fire Alarm Systems, Equipment Manufacturer's Specifications, Applicable UL Standards, NFPA Standards And Nationally Recognized Industry Standards And Practices, UL 1023, UL 985, Low Temperature And Water Leak Detection Systems, VOIP Dangers, Testing And Completion, Detection Principles, Meeting Minimum Standards, Initiating Devices, Inherent Safeguards, Perimeter Vs. Motion Detection, Partial Perimeter Vs. Full Perimeter, Stay Shunting, Contacts Only, Hardwired, Wireless And Hybrid Systems, Telephone Line Security Options, Smoke Detection, Heat Detection, Carbon Monoxide Detection, Gas Detection, Exceeding Code Requirements, Supplemental Issues With Residential Fire And Code Restrictions With System Detectors And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Triad Security Systems, Feldman Brothers Electrical Supply Company, ALTEC Electronic Systems, Security Controls Concepts & Designs, Inc., A.J.R. Security Systems, Inc., United Burglar Alarm, Inc., A-1 Security, Inc., Integrated Systems & Services, RR Concepts, Inc., ALTEC Electronic Systems, Consolidated Security, Inc., H&H Alarms, East Coast Security Systems, The Alarm Doctor, Co., C.W. Security Service, Northeast Security Systems, Inc., E.T. Security Systems, Inc., Advanced Video Surveillance, Inc., William R. Kelly Associates, Inc., Fortress Protection, LLC, Engineered Solutions Corp., Altronics, Inc., Open Systems Integrators, Inc., Ranger Security, Inc., Sound Facets, LLC, B&R Systems, LLC, And Integrated Electronic Solutions, Inc., Gold Protective Systems, Inc., Homeguard Alarm Systems, Inc., And National Security, Inc.
- October 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Understanding UL Certificated Systems & Standards, Hackensack, New Jersey. Topics: UL Certified System Requirements, Performance Based Standards, Equipment Manufacturer's Specifications, UL 681, UL 827. The Authority Having Jurisdiction, The UL Certificate, Becoming UL Listed, Maintaining Your UL Listing, Yearly Inspection, Defects Report, Service And Maintenance Obligations And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: TRIAD Security, Sovereign Signal Systems, D.N.E. Security Communications, East Coast Security Systems, Q.A.L. Security Corp., AMERIGARD Alarm & Security Corp., Honeywell, Feldman Brothers Electrical Supply Co., Engineered Solutions Corp., William R. Kelly Associates, Inc., Integrated Systems & Services, Incorporated, Jaymer Communications Corp., Central State

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Medical Center, United Burglar Alarm, Inc., Consolidated Security, Inc., ALTEC Electronic Systems, Ranger Security, Inc., Advanced Video Surveillance, Inc., Security Controls Concepts & Designs, Inc., E.T. Security Systems, Inc., The Alarm Doctor, C.W. Security Service And Security Service Company.

- October 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, NFPA 72®: The National Fire Alarm Code®-2007 Edition, Hackensack, New Jersey. Topics: Understanding NFPA 72®, Navigating Through NFPA 72®, Plans, Permits And Submittals, The Authority Having Jurisdiction (AHJ), Definitions, Fundamentals Of Fire Alarm Systems, Application, Purpose, Equipment, Personnel, System Fundamentals, Documentation, Impairments, Mass Notification Systems, Appliances, Purpose, Performance Based Design, General Requirements, Requirements For Smoke And Heat Detectors, Heat-Sensing Fire Detectors, Smoke-Sensing Fire Detectors, Radiant Energy-Sensing Fire Detectors, Combinations, Multi-Criteria And Multi-Sensor Detectors, Other Fire Detectors, Sprinkler Waterflow Alarm-Initiating Devices, Supervisory Signal-Initiating Devices, Smoke Detectors For Control Of Smoke Spread, Mass Notification Systems, Notification Appliances For Fire Alarm Systems, Application, Purpose, Audible Characteristics, Visible Characteristics-Public Mode And Private Mode, Supplementary Visible Signaling Method, Textual Audible Appliances, Textual Visible Appliances, Tactile Appliances, Standard Emergency Service Interface, Mass Notification Systems, Supervising Station Fire Alarm Systems, Fire Alarm Systems Or Central Station Service, Proprietary Supervising Station, Remote Supervising Station Fire Alarm Systems, Communications Methods For Supervising Station Fire Alarm Systems, Mass Notification Systems, Inspection, Testing, Maintenance, Single And Multiple Station Alarms And Household Fire Alarm Systems, Basic Requirements, Assumptions, Detection And Notification, Power Supplies, Equipment Performance, Installation, Optional Functions, Maintenance And Tests, Markings And Instructions. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: TRIAD Security, Sovereign Signal Systems, D.N.E. Security Communications, East Coast Security Systems, Q.A.L. Security Corp., AMERIGARD Alarm & Security Corp., Honeywell, Feldman Brothers Electrical Supply Co., Engineered Solutions Corp., William R. Kelly Associates, Inc., Integrated Systems & Services, Incorporated, Jaymer Communications Corp., Central State Medical Center, United Burglar Alarm, Inc., Consolidated Security, Inc., ALTEC Electronic Systems, Ranger Security, Inc., Advanced Video Surveillance, Inc., Security Controls Concepts & Designs, Inc., E.T. Security Systems, Inc., The Alarm Doctor, C.W. Security Service And Security Service Company.
- September 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Smoke Detectors: The Science Of Automatic Detection, Hackensack, New Jersey. Topics: Fire Science, Smoke Detector Operations And Functionality, Hardwired And Wireless Smoke Detectors, The Visible And Invisible Particles Of Combustion: Understanding The Micron, Smoldering Fires Vs. Fast Flaming Fires, Environmental Limitations Of Smoke Detectors, Technical Limitations Of Smoke Detectors, The Four Stages Of A Fire, Obscuration, Stratification, Equipment Manufacturers Specifications, NFPA, Codes And Standards, Quantifying The Reliability Of Smoke Detectors, UL Standard 217, UL Standard 268, UL Standard 985, UL Standard 864, NFPA 72® The National Fire Alarm Code®, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction (AHJ), International Residential Code (IRC), To Intentionally Exceed Fire Code Requirements Or Not, The Functional And Reliable Life Expectancy Of Smoke Detectors, Placement And Spacing, Different Types Of Smoke Detectors And Smoke Detection Systems, Two-Wire Smoke Detectors, Cross Listing Compatibility, Four Wire Smoke Detectors, Beam Detectors, Duct Detectors, Conventional Smoke Detection Systems, Addressable Smoke Detection Systems, Analog Addressable Smoke Detection Systems, Types Of Smoke Detection Coverage, Emerging Smoke Detection Technologies, Inspection, Testing And Maintenance Of Smoke Detectors, The Proper Methodology For Testing, Inspection And Maintenance, Identification Of Defects And Irregularities In Design, Recommendation, Application, Installation, Placement, Testing, Inspection, Maintenance, Repair And Monitoring Of Smoke Detectors, Functional Vs. Sensitivity Testing, Inherent

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Safeguards, Power Supervision Relays, End Of Line Resistor Supervision, Dangers And Hazards, Remote Momentary Of Toggle Reset Switch, T-Tapping, Special Applications Where Smoke Detectors Shall Be Installed And/Or Where The Occupancy Is Intrinsically Safe And Case Studies Where Fire Alarm Systems Failed And The Reasons Why. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Bravante & Associates, Rutgers University, ADT, Sound Facets, LLC, Sovereign-Bronnelly, LLC, Bounty Alarms, LLC, Feldman Brothers Electrical Supply Company, Greater Essex Security, Inc., William R. Kelley Associates, Inc., East Coast Security Systems, Archer's Protection, United Burglar Alarm, Inc., Ranger Security, Inc., A.J.R. Security Systems, Inc., Secure Zone, LLC, Northeast Security Systems, Inc., Bounty Alarms, LLC, E.T. Security Systems, Inc. And The Alarm Doctor Company.

- September 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Alarm Science, Hackensack, New Jersey. Topics: Analysis And Technical Overview Of Alarm Science, Equipment Manufacturer's Specifications, UL Standards And Nationally Recognized Industry Standards And Practices, Duties Of An Alarm Contractor, The 25 Principles Of Alarm Science, Identification Of Defects And Irregularities In Alarm System Design, Application, Installation, Programming, Service, Inspection, Maintenance, Testing, And Monitoring, Existing Systems, Takeovers, Liability, Policies, Procedures, Customs And Habits And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Bravante & Associates, Rutgers University, ADT, Sound Facets, LLC, Sovereign-Bronnelly, LLC, Bounty Alarms, LLC, B&R Systems, LLC, Feldman Brothers Electrical Supply Company, Greater Essex Security, Inc., William R. Kelley Associates, Inc., D.N.E. Security Communications, East Coast Security Systems, Archer's Protection, Triad Security Systems, United Burglar Alarm, Inc., Ranger Security, Inc., A.J.R. Security Systems, Inc., Secure Zone, LLC, Northeast Security Systems, Inc., Bounty Alarms, LLC, E.T. Security Systems, Inc., And The Alarm Doctor Company.
- September 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Recessed Contacts: Aesthetically Pleasing Or The New Liability, Hackensack, New Jersey. Topics: Identifying Liability Concerns When Installing Recessed Contracts, Window And Door Manufacturer's Warranties, Installing Recessed Contracts In Door Or Windows Voids The Manufacturer's Warranty, Alternative Methodologies To Recessed Alarm Contacts, Identifying Exclusions In Errors And Omissions Coverage For Builder Trace Homes And The Installation Of Recessed Contacts, Case Studies, Water Damage, Mold And Piercing The Building Envelope. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Q.A.L. Security Corporation, Sovereign Signal Systems, B& R Systems, LLC, Protection Plus Security Systems, LLC, Fortress Protection, LLC, Altronics, Inc., Protection Plus Security Systems, LLC, Advanced Video Surveillance, Inc., East Coast Security Systems, Integrated Electronic Solutions, Inc., Gold Protective Systems, Inc., A-1 Security, Inc., United Burglar Alarm, Inc., Triad Security Systems, Inc., Ranger Security, Inc., Advanced Video Surveillance, Inc., A.J.R. Security Systems, Inc., Northeast Security Systems, Inc., E.T. Security Systems, Inc., And The Alarm Doctor, Co.
- September 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Security Surveys & Risk Analysis, Hackensack, New Jersey. Topics: Defining The Security Survey, How To Apply Security Surveys To Alarm Systems, Defining Risk Analysis, Hoe To Apply Risk Analysis To Alarm Systems, The Crime Triangle-Recognizing Motive, Intent And Opportunity, CPTED-Crime Prevention Through Environmental Design, Techniques And Methodologies, Performing A Security Survey-What To Do, What Not To Do, And How To Help Make Sure That You Have Not Missed Anything, Foreseeability And Criticality, Quantifying Risk Analysis And Incorporating It Into The Security Survey, Applying The Crime Triangle Into The Security Survey-How To Help Break The Crime Triangle, Utilizing CPTED, Crime Prevention Through Environmental Design In The Security Survey And Risk Analysis Of The Subject Premises, Utilizing Either Passive, Active, Or Combination

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Methodologies, Written Reports And Recommendations, What To Say, What Not To Say, And How To Help Make Sure That Your Recommendations Are Not A One Size Fits All Approach. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Q.A.L. Security Corporation, Sovereign Signal Systems, B& R Systems, LLC, Protection Plus Security Systems, LLC, Fortress Protection, LLC, Altronics, Inc., Protection Plus Security Systems, LLC, Advanced Video Surveillance, Inc., East Coast Security Systems, Integrated Electronic Solutions, Inc., Gold Protective Systems, Inc., A-1 Security, Inc., United Burglar Alarm, Inc., Triad Security Systems, Inc., Ranger Security, Inc., Advanced Video Surveillance, Inc., A.J.R. Security Systems, Inc., Northeast Security Systems, Inc., E.T. Security Systems, Inc., And The Alarm Doctor, Co.

- September 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Machine Wired Screens: Proper Application & Installation, Hackensack, New Jersey. Topics: Proper Application And Installation Of Machine Wired Screens, Type Of Machine Wired Screens, Inside Screens, Outside Screens, Wire Trap, Magnetic Contact Trap, Horizontal Vs. Vertical Mesh Installation, Protective Loop Circuit Supervision, Case Studies, Best Practices When Ordering Machine Wired Screens, When Not Use Machine Wired Screens and False Alarm Issues With Machine Wired Screens And How To Avoid Them. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Sovereign Signal Systems, B& R Systems, LLC, Protection Plus Security Systems, LLC, Fortress Protection, LLC, Altronics, Inc., Protection Plus Security Systems, LLC, Advanced Video Surveillance, Inc., East Coast Security Systems, Integrated Electronic Solutions, Inc., Gold Protective Systems, Inc., A-1 Security, Inc., United Burglar Alarm, Inc., Triad Security Systems, Inc., Ranger Security, Inc., Advanced Video Surveillance, Inc., A.J.R. Security Systems, Inc., Northeast Security Systems, Inc., E.T. Security Systems, Inc., And The Alarm Doctor, Co.
- September 2009, Guest Speaker, American Society For Industrial Security (ASIS) Northern New Jersey Chapter XIII Meeting, Alarm Science: The Forensic Study Of Alarm Systems, Rochelle Park, New Jersey. Topics: Alarm and Security Science, The Forensic Study Of Alarm Systems, Case Studies, The Security Survey, Critical Detection Point (CDP), The Crime Triangle, Crime Prevention Through Environmental Design, (CPTED) Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Proper Design, Recommendations, Application, Installation, Programming, Service, Maintenance, Inspection and Monitoring Of Security And Fire Alarm Systems, Telephone Line Security Methodologies, Telephone Line Fault Monitors, And Recognized Practices Of The Technical Community Of The Alarm and Security Industry. Participants: Security Professionals From The Following Companies: Care-Inc., Summit Security, Diebold, Verizon, Boon Edan, Video Security Solutions, Bergen County Prosecutor's Office, Aegis Bleu, Jersey City Police Department, JP Morgan Chase And SCI.
- August 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Smoke Detectors: The Science Of Automatic Detection, Hackensack, New Jersey. Topics: Fire Science, Smoke Detector Operations And Functionality, Hardwired And Wireless Smoke Detectors, The Visible And Invisible Particles Of Combustion: Understanding The Micron, Smoldering Fires Vs. Fast Flaming Fires, Environmental Limitations Of Smoke Detectors, Technical Limitations Of Smoke Detectors, The Four Stages Of A Fire, Obscuration, Stratification, Equipment Manufacturers Specifications, NFPA, Codes And Standards, Quantifying The Reliability Of Smoke Detectors, UL Standard 217, UL Standard 268, UL Standard 985, UL Standard 864, NFPA 72® The National Fire Alarm Code®, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction (AHJ), International Residential Code (IRC), To Intentionally Exceed Fire Code Requirements Or Not, The Functional And Reliable Life Expectancy Of Smoke Detectors, Placement And Spacing, Different Types Of Smoke Detectors And Smoke Detection Systems, Two-Wire Smoke Detectors, Cross Listing Compatibility, Four Wire Smoke Detectors, Beam Detectors, Duct Detectors, Conventional Smoke Detection Systems, Addressable Smoke Detection Systems, Analog Addressable Smoke Detection Systems, Types Of Smoke Detection Coverage, Emerging Smoke Detection Technologies, Inspection, Testing And Maintenance Of Smoke

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Detectors, The Proper Methodology For Testing, Inspection And Maintenance, Identification Of Defects And Irregularities In Design, Recommendation, Application, Installation, Placement, Testing, Inspection, Maintenance, Repair And Monitoring Of Smoke Detectors, Functional Vs. Sensitivity Testing, Inherent Safeguards, Power Supervision Relays, End Of Line Resistor Supervision, Dangers And Hazards, Remote Momentary Of Toggle Reset Switch, T-Tapping, Special Applications Where Smoke Detectors Shall Be Installed And/Or Where The Occupancy Is Intrinsically Safe And Case Studies Where Fire Alarm Systems Failed And The Reasons Why. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Jan-Mar, Stahl Security, Access Granted Access Denied, Reider Associates, Supreme Alarm, Don't Be Alarmed, Bullseye Security, Lyndhurst Quality Alarm, Atlantic Central Station, A&R Alarm, Sherlock Security, Jen-Kare, ARM Security, Digital Security, ABP Security, Quality Alarm Systems, Diversified Systems, IEH, Active Alarm, Digital Casa, TOMMAX, American Alarm Associates, R.J. Montgomery Associates And P.E. Security.

- August 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, NFPA 72®: The National Fire Alarm Code®, Hackensack, New Jersey. Topics: Understanding NFPA 72®, Navigating Through NFPA 72, Plans, Permits And Submittals, The Authority Having Jurisdiction (AHJ), Definitions, Fundamentals Of Fire Alarm Systems, Application, Purpose, Equipment, Personnel, System Fundamentals, Documentation, Impairments, Mass Notification Systems, Appliances, Purpose, Performance Based Design, General Requirements, Requirements For Smoke And Heat Detectors, Heat-Sensing Fire Detectors, Smoke-Sensing Fire Detectors, Radiant Energy-Sensing Fire Detectors, Combinations, Multi-Criteria And Multi-Sensor Detectors, Other Fire Detectors, Sprinkler Waterflow Alarm-Initiating Devices, Supervisory Signal-Initiating Devices, Smoke Detectors For Control Of Smoke Spread, Mass Notification Systems, Notification Appliances For Fire Alarm Systems, Application, Purpose, Audible Characteristics, Visible Characteristics-Public Mode And Private Mode, Supplementary Visible Signaling Method, Textual Audible Appliances, Textual Visible Appliances, Tactile Appliances, Standard Emergency Service Interface, Mass Notification Systems, Supervising Station Fire Alarm Systems, Fire Alarm Systems Or Central Station Service, Proprietary Supervising Station, Remote Supervising Station Fire Alarm Systems, Communications Methods For Supervising Station Fire Alarm Systems, Mass Notification Systems, Inspection, Testing, Maintenance, Single And Multiple Station Alarms And Household Fire Alarm Systems, Basic Requirements, Assumptions, Detection And Notification, Power Supplies, Equipment Performance, Installation, Optional Functions, Maintenance And Tests, Markings And Instructions. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Jan-Mar, Stahl Security, Access Granted Access Denied, Reider Associates, Supreme Alarm, Don't Be Alarmed, Bullseye Security, Lyndhurst Quality Alarm, Atlantic Central Station, A&R Alarm, Sherlock Security, Jen-Kare, ARM Security, Digital Security, ABP Security, Quality Alarm Systems, Diversified Systems, IEH, Active Alarm, Digital Casa, TOMMAX, American Alarm Associates, And P.E. Security.
- August 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Smoke Detectors: The Science Of Automatic Detection, Hackensack, New Jersey. Topics: Fire Science, Smoke Detector Operations And Functionality, Hardwired And Wireless Smoke Detectors, The Visible And Invisible Particles Of Combustion: Understanding The Micron, Smoldering Fires Vs. Fast Flaming Fires, Environmental Limitations Of Smoke Detectors, Technical Limitations Of Smoke Detectors, The Four Stages Of A Fire, Obscuration, Stratification, Equipment Manufacturers Specifications, NFPA, Codes And Standards, Quantifying The Reliability Of Smoke Detectors, UL Standard 217, UL Standard 268, UL Standard 985, UL Standard 864, NFPA 72® The National Fire Alarm Code®, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction (AHJ), International Residential Code (IRC), To Intentionally Exceed Fire Code Requirements Or Not, The Functional And Reliable Life Expectancy Of Smoke Detectors, Placement And Spacing, Different Types Of Smoke

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Detectors And Smoke Detection Systems, Two-Wire Smoke Detectors, Cross Listing Compatibility, Four Wire Smoke Detectors, Beam Detectors, Duct Detectors, Conventional Smoke Detection Systems, Addressable Smoke Detection Systems, Analog Addressable Smoke Detection Systems, Types Of Smoke Detection Coverage, Emerging Smoke Detection Technologies, Inspection, Testing And Maintenance Of Smoke Detectors, The Proper Methodology For Testing, Inspection And Maintenance, Identification Of Defects And Irregularities In Design, Recommendation, Application, Installation, Placement, Testing, Inspection, Maintenance, Repair And Monitoring Of Smoke Detectors, Functional Vs. Sensitivity Testing, Inherent Safeguards, Power Supervision Relays, End Of Line Resistor Supervision, Dangers And Hazards, Remote Momentary Of Toggle Reset Switch, T-Tapping, Special Applications Where Smoke Detectors Shall Be Installed And/Or Where The Occupancy Is Intrinsically Safe And Case Studies Where Fire Alarm Systems Failed And The Reasons Why. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Integrated Electronic Solutions, Inc., Aurora Home Systems, LLC, B&R Systems LLC, Fortress Protection, National Security, Shore Alarm, Inc., Complete Security Systems, East Coast Security System, All Safe Alarm Systems, Gold Protective Systems, Q.A.L Security Corp., A-I Security, Inc., Marker Alarm, Garden State Fire & Security Company, Metro Alarm, APS Corp., B-Secure, Tramutolo Security Services, DMI Security And Alarm Doctor.

- August 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, NFPA 72®: The National Fire Alarm Code®, Hackensack, New Jersey. Topics: Understanding NFPA 72®, Navigating Through NFPA 72, Plans, Permits And Submittals, The Authority Having Jurisdiction (AHJ), Definitions, Fundamentals Of Fire Alarm Systems, Application, Purpose, Equipment, Personnel, System Fundamentals, Documentation, Impairments, Mass Notification Systems, Appliances, Purpose, Performance Based Design, General Requirements, Requirements For Smoke And Heat Detectors, Heat-Sensing Fire Detectors, Smoke-Sensing Fire Detectors, Radiant Energy-Sensing Fire Detectors, Combinations, Multi-Criteria And Multi-Sensor Detectors, Other Fire Detectors, Sprinkler Waterflow Alarm-Initiating Devices, Supervisory Signal-Initiating Devices, Smoke Detectors For Control Of Smoke Spread, Mass Notification Systems, Notification Appliances For Fire Alarm Systems, Application, Purpose, Audible Characteristics, Visible Characteristics-Public Mode And Private Mode, Supplementary Visible Signaling Method, Textual Audible Appliances, Textual Visible Appliances, Tactile Appliances, Standard Emergency Service Interface, Mass Notification Systems, Supervising Station Fire Alarm Systems, Fire Alarm Systems Or Central Station Service, Proprietary Supervising Station, Remote Supervising Station Fire Alarm Systems, Communications Methods For Supervising Station Fire Alarm Systems, Mass Notification Systems, Inspection, Testing, Maintenance, Single And Multiple Station Alarms And Household Fire Alarm Systems, Basic Requirements, Assumptions, Detection And Notification, Power Supplies, Equipment Performance, Installation, Optional Functions, Maintenance And Tests, Markings And Instructions. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Integrated Electronic Solutions, Inc., Aurora Home Systems, LLC, B&R Systems LLC, Fortress Protection, National Security, Shore Alarm, Inc., Complete Security Systems, East Coast Security System, All Safe Alarm Systems, Gold Protective Systems, Q.A.L Security Corp., A-I Security, Inc., Marker Alarm, Garden State Fire & Security Company, Metro Alarm, APS Corp., B-Secure, Tramutolo Security Services, DMI Security And Alarm Doctor.
- July 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Overt And Covert CCTV Systems, Hackensack, New Jersey. Topics: Proper Design And Installation Of CCTV Systems, Understanding The Differences Between Overt And Covert CCTV Systems, Liability Concerns When Installing CCTV Systems, Types Of Occupancies, Lighting, Security Concerns, Vandalism, Prior Loss History, Purpose Of System, Expectation Of Privacy, Equipment Manufacturer's Specifications, Onsite Surveillance, Remote View, DVR Technologies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Sentinel Fire Alarm, Supreme Alarm, Garcia Alarm, Pro-Tech, Stahl Security, ABP Security, Strictly Wireless, IEH Communication, Digital Reaction, JV Security, Energy Innovations, PE Security, Jersey Protective, Jan-Mar,

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ARM Security, Quality Alarm Systems, TOMMAX, Jen-Kare, D& G Home Security, Sherlock Security, Savastano Alarm, Bullseye Security, J&B Lock & Alarm, Digital Casa, Don't Be Alarmed, Access Granted Access Denied, Rieder Associates, Shore Security Solutions, Charles Alarm, Atlantic Central Station And Lyndhurst Quality Alarms.

- July 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Residential Security & Fire Alarm Systems, Hackensack, New Jersey. Topics: Detection, Deterrence, Annunciation And Notification, Minimization Of Loss, Proper Recommendation, Application, Installation, Service, Maintenance And Monitoring Of Residential Security And Fire Alarm Systems, Existing Residential Security And Fire Alarm Systems, Equipment Manufacturer's Specifications, Applicable UL Standards, NFPA Standards And Nationally Recognized Industry Standards And Practices, UL 1023, UL 985, Low Temperature And Water Leak Detection Systems, VOIP Dangers, Testing And Completion, Detection Principles, Meeting Minimum Standards, Initiating Devices, Inherent Safeguards, Perimeter Vs. Motion Detection, Partial Perimeter Vs. Full Perimeter, Stay Shunting, Contacts Only, Hardwired, Wireless And Hybrid Systems, Telephone Line Security Options, Smoke Detection, Heat Detection, Carbon Monoxide Detection, Gas Detection, Exceeding Code Requirements, Supplemental Issues With Residential Fire And Code Restrictions With System Detectors And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Sentinel Fire Alarm, Supreme Alarm, Garcia Alarm, Pro-Tech, Stahl Security, ABP Security, Strictly Wireless, IEH Communication, Digital Reaction, JV Security, Energy Innovations, PE Security, Jersey Protective, Jan-Mar, ARM Security, Quality Alarm Systems, TOMMAX, Jen-Kare, D& G Home Security, Sherlock Security, Savastano Alarm, Bullseye Security, J&B Lock & Alarm, Digital Casa, Don't Be Alarmed, Access Granted Access Denied, Rieder Associates, Shore Security Solutions, Charles Alarm, Atlantic Central Station And Lyndhurst Quality Alarms.
- July 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Smoke Detectors: The Science Of Automatic Detection, Hackensack, New Jersey. Topics: Fire Science, Smoke Detector Operations And Functionality, Hardwired And Wireless Smoke Detectors, The Visible And Invisible Particles Of Combustion: Understanding The Micron, Smoldering Fires Vs. Fast Flaming Fires, Environmental Limitations Of Smoke Detectors, Technical Limitations Of Smoke Detectors, The Four Stages Of A Fire, Obscuration, Stratification, Equipment Manufacturers Specifications, NFPA, Codes And Standards, Quantifying The Reliability Of Smoke Detectors, UL Standard 217, UL Standard 268, UL Standard 985, UL Standard 864, NFPA 72® The National Fire Alarm Code®, Nationally Recognized Industry Standards And Practices, The Authority Having Jurisdiction (AHJ), International Residential Code (IRC), To Intentionally Exceed Fire Code Requirements Or Not, The Functional And Reliable Life Expectancy Of Smoke Detectors, Placement And Spacing, Different Types Of Smoke Detectors And Smoke Detection Systems, Two-Wire Smoke Detectors, Cross Listing Compatibility, Four Wire Smoke Detectors, Beam Detectors, Duct Detectors, Conventional Smoke Detection Systems, Addressable Smoke Detection Systems, Analog Addressable Smoke Detection Systems, Types Of Smoke Detection Coverage, Emerging Smoke Detection Technologies, Inspection, Testing And Maintenance Of Smoke Detectors, The Proper Methodology For Testing, Inspection And Maintenance, Identification Of Defects And Irregularities In Design, Recommendation, Application, Installation, Placement, Testing, Inspection, Maintenance, Repair And Monitoring Of Smoke Detectors, Functional Vs. Sensitivity Testing, Inherent Safeguards, Power Supervision Relays, End Of Line Resistor Supervision, Dangers And Hazards, Remote Momentary Of Toggle Reset Switch, T-Tapping, Special Applications Where Smoke Detectors Shall Be Installed And/Or Where The Occupancy Is Intrinsically Safe And Case Studies Where Fire Alarm Systems Failed And The Reasons Why. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: J.A.S.S. Security Systems, Incorporated, ABE Alarm Service, Sound-A-Vision, LLC, Diversify Interdigital Security Corporation, Complete Security Systems, Automatic Alarm Systems, Incorporated, Alier-3 Services, Reddi

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- July 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, NFPA 72®: The National Fire Alarm Code® (TECFA), Hackensack, New Jersey. Topics: Understanding NFPA 72®, Navigating Through NFPA 72, Plans, Permits And Submittals, The Authority Having Jurisdiction (AHJ), Definitions, Fundamentals Of Fire Alarm Systems, Application, Purpose, Equipment, Personnel, System Fundamentals, Documentation, Impairments, Mass Notification Systems, Appliances, Purpose, Performance Based Design, General Requirements, Requirements For Smoke And Heat Detectors, Heat-Sensing Fire Detectors, Smoke-Sensing Fire Detectors, Radiant Energy-Sensing Fire Detectors, Combinations, Multi-Criteria And Multi-Sensor Detectors, Other Fire Detectors, Sprinkler Waterflow Alarm-Initiating Devices, Supervisory Signal-Initiating Devices, Smoke Detectors For Control Of Smoke Spread, Mass Notification Systems, Notification Appliances For Fire Alarm Systems, Application, Purpose, Audible Characteristics, Visible Characteristics-Public Mode And Private Mode, Supplementary Visible Signaling Method, Textual Audible Appliances, Textual Visible Appliances, Tactile Appliances, Standard Emergency Service Interface, Mass Notification Systems, Supervising Station Fire Alarm Systems, Fire Alarm Systems Or Central Station Service, Proprietary Supervising Station, Remote Supervising Station Fire Alarm Systems, Communications Methods For Supervising Station Fire Alarm Systems, Mass Notification Systems, Inspection, Testing, Maintenance, Single And Multiple Station Alarms And Household Fire Alarm Systems, Basic Requirements, Assumptions, Detection And Notification, Power Supplies, Equipment Performance, Installation, Optional Functions, Maintenance And Tests, Markings And Instructions. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: J.A.S.S. Security Systems, Incorporated, ABE Alarm Service, Sound-A-Vision, LLC, Diversify Interdigital Security Corporation, Complete Security Systems, Automatic Alarm Systems, Incorporated, Alier-3 Services, Reddi Alarm Systems, Altronics, DABCO, System Design Associates, De Santis Integrators, LLC, De-Ben Security Systems, DNE Security Communications, Absolute Security Inc., Integrated Electronic Solutions, Incorporated, Garcia Alarm, Seton Hall University, Triad Security Systems, Three Ring Alarm, LLC, State Of The Art Security Systems, COMTEC Systems, Incorporated, Wire Excellence Security Systems, Inter County Alarm, Maximum Security, Royal Systems Corporation, SEM Security Services, Flagship Systems, Incorporated, Pannella Security Systems, Incorporated, RR Concepts, Incorporated, Shore Security Solution, Tapco Protection Systems, Incorporated And Systems Sales Corporation.

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- June 2009, Instructor, Ways To Help Minimize Your Liability, When Providing Central Station Monitoring Services, Electronic Security Expo (ESX)^{28,29,30,31} Baltimore, Maryland. Is Your Central Station Taking The Steps Necessary To Minimize Your Liability In The Event Of Loss? This Presentation Will Focus On Procedures And Policies You Should Implement Within Your Central Station. Also Discussed Will Be Training, Response Protocols And Documentation. Topics: Anatomy Of A Lawsuit, Theories Of Liability, New Installations, Takeovers, Connecting To Existing Systems, Service Calls, Programming Features, Recommendations, Life Safety Systems And Company Documentation. Participants: Owners, General Management, Operations/Technical Management, Central Station Managements, Sales And Marketing Management, Top Technical, Central Station And Sales And Marketing Staff From Security Integration/Installation Companies With Central Stations, Security Integration/Installation Companies Without Central Stations, Non-Installing Central Stations, Security Consultants, Other Security Installing/ Contracting Companies And Security Products Distributors And Representatives.
- June 2009, Instructor, Your Company On Trial, Electronic Security Expo (ESX)^{32,33,34,35} Baltimore, Maryland. This Seminar Was Created To Assist Alarm Company Management, As Well As Employees Of Alarm Companies, To Proactively Lower Their Loss Potential Before A Loss Occurs-Beginning Even As Early As When They Are First Contracted To Install, Service, Maintain, Inspect, Test Or Monitor Security And Fire Alarm Systems. Actual Case Studies Will Be Presented Where Alarm Systems Failed, And The Reasons Why Will Be Scientifically Explored. This Session Will Provide Great Scientific, Technical, And Forensic Alarm Information Which Can Be Immediately Implemented For Any Size Alarm Company. Topics: Case Studies, Anatomy Of A Lawsuit, Theories Of Liability, Company Files And Records, Properly Designed Systems, Recommendations, Installations, Programming, Inspection, Testing, Service, Maintenance And Monitoring. Participants: Owners, General Management, Operations/Technical Management, Central Station Managements, Sales And Marketing Management, Top Technical, Central Station And Sales And Marketing Staff From Security Integration/Installation Companies With Central Stations, Security Integration/Installation Companies

²⁸ All courses have been tailored to meet the needs of owners and top executives, installation/operations managers, central station managers, sales and marketing managers, systems designers, technicians and central station operators of security systems integration and monitoring companies, custom electronics integrators, electrical and HVAC contractors and consulting engineers.

²⁹ Sponsors: Brinks Home Security, Impath Networks, Risco Group, S.I.C. Consulting, Inc., Security America, Rapid Response, ESC Central, Inc., Honeywell, GE Security, Security Dealer & Integrator, CSAA, NBFAA, Central Alarm, The Mechanic Group, Windy City Wire Cable & Technology Products, LLC, Electronic Supply Company, TRI-ED, Security Products, SDM Magazine, Cygnus Security Group, Security Systems News, Security Sales & Integration, and Securityinfowatch.com.

³⁰ 1.25 New Jersey State Approved Continuing Education Credits (CEUS) For Fire Alarm Burglar Alarm & Locksmith Licensees.

³¹ 0.1 NBFAA National Training School (NTS) CEU Class Credits.

³² All courses have been tailored to meet the needs of owners and top executives, installation/operations managers, central station managers, sales and marketing managers, systems designers, technicians and central station operators of security systems integration and monitoring companies, custom electronics integrators, electrical and HVAC contractors and consulting engineers.

³³ Sponsors: Brinks Home Security, Impath Networks, Risco Group, S.I.C. Consulting, Inc., Security America, Rapid Response, ESC Central, Inc., Honeywell, GE Security, Security Dealer & Integrator, CSAA, NBFAA, Central Alarm, The Mechanic Group, Windy City Wire Cable & Technology Products, LLC, Electronic Supply Company, TRI-ED, Security Products, SDM Magazine, Cygnus Security Group, Security Systems News, Security Sales & Integration, and Securityinfowatch.com.

³⁴ 1.25 New Jersey State Approved Continuing Education Credits (CEUS) For Fire Alarm Burglar Alarm & Locksmith Licensees.

³⁵ 0.1 NBFAA National Training School (NTS) CEU Class Credits.

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Without Central Stations, Non-Installing Central Stations, Security Consultants, Other Security Installing And Contracting Companies And Security Products Distributors And Representatives.

- June 2009, Instructor, Using Risk Assessment & Threat Analysis As A Selling Tool, Electronic Security Expo (ESX) ^{36,37,38,39} Baltimore, Maryland. This Scientific And Technical Course Has Been Specifically Designed To Help Minimize Liability When Designing, Specifying, And Recommending All Types Of Security And Fire Alarm Systems. Topics: Case Studies, Educating The Customer, Understanding Risk Assessment, Threat Analysis, The Security Survey, The Crime Triangle, CPTED, 25 Principles Of Alarm Science, Takeovers, Best Location Practices, And Crucial Methodologies To Help Identify Risk And Vulnerabilities. Participants: Owners, General Management, Operations/Technical Management, Central Station Managements, Sales And Marketing Management, Top Technical, Central Station And Sales And Marketing Staff From Security Integration/Installation Companies With Central Stations, Security Integration/Installation Companies Without Central Stations, Non-Installing Central Stations, Security Consultants, Other Security Installing And Contracting Companies And Security Products Distributors And Representatives.
- June 2009, Instructor, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, Metrotech Center, JP Morgan Chase, Brooklyn, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures. Participants: New York City Police And Crime Prevention Officers, Sergeants, Lieutenants And Captains From The 1st, 5th, 6th, 10th, 17th, 28th, 34th, 40th, 47th, 61st, 63rd, 67th, 71st, 72nd, 73rd, 75th, 77th, 83rd, 90th, 94th, 100th, 104th, 106th, 110th, 114th, And 115th And Representative From The New York City Fire Department.
- June 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Understanding UL Certificated Systems And Standards, Hackensack, New Jersey. Topics: UL Certified System Requirements, Performance Based Standards, Equipment Manufacturer's Specifications, UL 681, UL 827. The Authority Having Jurisdiction, The UL Certificate, Becoming UL Listed, Maintaining Your UL Listing, Yearly Inspection, Defects Report, Service And Maintenance Obligations And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License

³⁶ All courses have been tailored to meet the needs of owners and top executives, installation/operations managers, central station managers, sales and marketing managers, systems designers, technicians and central station operators of security systems integration and monitoring companies, custom electronics integrators, electrical and HVAC contractors and consulting engineers.

³⁷ Sponsors: Brinks Home Security, Impath Networks, Risco Group, S.I.C. Consulting, Inc., Security America, Rapid Response, ESC Central, Inc., Honeywell, GE Security, Security Dealer & Integrator, CSAA, NBFAA, Central Alarm, The Mechanic Group, Windy City Wire Cable & Technology Products, LLC, Electronic Supply Company, TRI-ED, Security Products, SDM Magazine, Cygnus Security Group, Security Systems News, Security Sales & Integration, and Securityinfowatch.com.

³⁸ 1.25 New Jersey State Approved Continuing Education Credits (CEUS) For Fire Alarm Burglar Alarm & Locksmith Licensees.

³⁹ 0.1 NBFAA National Training School (NTS) CEU Class Credits.

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Holders From The Following Companies: Inner Security Services, Abe Alarm, Supreme Security Systems, Bounty Alarms, Atlantic Central Station, Lyndhurst Security, Dalco Electronic System Of New York, D&W Central Station Fire Alarm Company, Inc., Charles Alarm, Inc., Totally Secure, Inc., DNE Security Communications, Q.A.L. Security Corporation, State Of The Art Security System, Custom Alarms Services, Maximum Security, S.E.M. Security Systems, Inc., Supreme Security Systems, Shore Security Solutions, H.E.S. Electronics, Triad Security, Bounty Alarms, JM Resources, US Security And Sound, Inc., And Reider Associates.

- June 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Recessed Contacts: Aesthetically Pleasing Or The New Liability, Hackensack, New Jersey. Topics: Identifying Liability Concerns When Installing Recessed Contacts, Window And Door Manufacturer's Warranties, Alternative Methodologies, Identifying Exclusions In Errors And Omissions Coverage For Builder Trac Homes, Case Studies, Water Damage, Mold And Piercing The Building Envelope. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Inner Security Services, Abe Alarm, Supreme Security Systems, Bounty Alarms, Atlantic Central Station, Lyndhurst Security, Dalco Electronic System Of New York, D&W Central Station Fire Alarm Company, Inc., Charles Alarm, Inc., Totally Secure, Inc., DNE Security Communications, Q.A.L. Security Corporation, State Of The Art Security System, Custom Alarms Services, Maximum Security, S.E.M. Security Systems, Inc., Supreme Security Systems, Shore Security Solutions, H.E.S. Electronics, Triad Security, Bounty Alarms, JM Resources, US Security And Sound, Inc., And Reider Associates.
- June 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Machine Wired Screens: Proper Application And Installation, Hackensack, New Jersey. Topics: Proper Application And Installation, Inside Screens, Outside Screens, Wire Traps, Magnetic Contact Trap, Horizontal Vs. Vertical Mesh Installation, Protective Loop Circuit Supervision, Case Studies, Best Practices, When Not To Use Machine Wired Screens And False Alarm Issues. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Abcode Security, Inc., Tom Max, Jan-Mar Alarm Company, Inc., Charles Alarm Inc., Energy Innovations, Inc., Hawk-Reliable, Inc., Superior Security Systems, LLC, International Alarm Security, LLC, Stahl Security Systems, Future Vision Systems, LLC, Lyndhurst Quality Security, Inc., Jen-Kare Alarm Systems, LLC, Pro-Tech Systems, Inc., American Alarm Associates, Discovery Security, B-Protected Alarm Company, A&R Alarm Corporation, Sherlock Security Systems, Inc., Twin Security, Inc., Active Alarm Systems, LLC, Don't Be Alarmed, J& B Lock And Alarm, Inc., ADT, Northern Jersey Security Systems, Inc., Ultimate Security, Reider Associates, SMD, Shore Security Solutions, Inc., And P.E. Security.
- June 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Residential Security And Fire Alarm Systems, Hackensack, New Jersey. Topics: Detection, Deterrence, Annunciation And Notification, Minimization Of Loss, Proper Recommendation, Application, Installation, Service, Maintenance And Monitoring Of Residential Security And Fire Alarm Systems, Existing Residential Security And Fire Alarm Systems, Equipment Manufacturer's Specifications, Applicable UL Standards, NFPA Standards And Nationally Recognized Industry Standards And Practices, UL 1023, UL 985, Low Temperature And Water Leak Detection Systems, VOIP Dangers, Testing And Completion, Detection Principles, Meeting Minimum Standards, Initiating Devices, Inherent Safeguards, Perimeter Vs. Motion Detection, Partial Perimeter Vs. Full Perimeter, Stay Shunting, Contacts Only, Hardwired, Wireless And Hybrid Systems, Telephone Line Security Options, Smoke Detection, Heat Detection, Carbon Monoxide Detection, Gas Detection, Exceeding Code Requirements, Supplemental Issues With Residential Fire And Code Restrictions With System Detectors And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Abcode Security, Inc., Tom Max, Jan-Mar Alarm Company, Inc., Charles Alarm Inc., Energy Innovations, Inc., Hawk-Reliable, Inc., Superior Security Systems, LLC, International Alarm Security, LLC, Stahl Security Systems, Future Vision Systems, LLC, Lyndhurst Quality Security, Inc., Jen-Kare Alarm Systems, LLC, Pro-Tech Systems, Inc., American Alarm Associates, Discovery Security, B-Protected Alarm Company, A&R Alarm Corporation,

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Sherlock Security Systems, Inc., Twin Security, Inc., Active Alarm Systems, LLC, Don't Be Alarmed, J& B Lock And Alarm, Inc., ADT, Northern Jersey Security Systems, Inc., Ultimate Security, Reider Associates, SMD, Shore Security Solutions, Inc., And P.E. Security.

- May 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Security Surveys & Risk Analysis, Hackensack, New Jersey. Topics: The Security Survey, Risk Analysis, The Crime Triangle, CPTED, Foreseeability And Criticality, Quantifying Risk Analysis, Written Reports And Recommendations. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Lyndhurst Security, Jen-Kare, Don't Be Alarmed, Discover Security, Sherlock Security, Pro-Tech Systems, Quality Alarm, A&R Alarm, Digital Security, Hawk Reliable, IEH Communications, American Alarm Association, North Jersey Security, Digital Reaction, Twin Security, Cencom, Digitalcasa, JV Security, Sentinel Security, International Alarm, Active Alarm, Stahl Security, ADT, Coastal Security, Jan-Mar And PE Security.
- May 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Alarm Science, Hackensack, New Jersey. Topics: Analysis And Technical Overview Of Alarm Science, Equipment Manufacturer's Specifications, UL Standards And Nationally Recognized Industry Standards And Practices, Duties Of An Alarm Contractor, The 25 Principles Of Alarm Science, Identification Of Defects And Irregularities In Alarm System Design, Application, Installation, Programming, Service, Inspection, Maintenance, Testing, And Monitoring, Existing Systems, Takeovers, Liability, Policies, Procedures, Customs And Habits And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Lyndhurst Security, Jen-Kare, Don't Be Alarmed, Discover Security, Sherlock Security, Pro-Tech Systems, Quality Alarm, A&R Alarm, Digital Security, Hawk Reliable, IEH Communications, American Alarm Association, North Jersey Security, Digital Reaction, Twin Security, Cencom, Digitalcasa, JV Security, Sentinel Security, International Alarm, Active Alarm, Stahl Security, ADT, Coastal Security, Janmar And PE Security.
- May 2009, Instructor, New Jersey Division Of Consumer Affairs Approved Courses For Continuing Education Credits For The 2010 License Renewal, Commercial Security And Fire Alarm Systems, Hackensack, New Jersey. Topics: Minimization Of Loss, Proper Recommendation, Application, Installation, Service, Maintenance And Monitoring Of Commercial Security And Fire Alarm Systems, Existing Systems, Equipment Manufacturers Specification, Applicable UL Standards, NFPA Standards And Nationally Recognized Industry Standards And Practices, VOIP Dangers, Testing And Completion, Loss Potential, Detection Principles, Minimum Standards, Initiating Devices, Perimeter Vs. Motion Detection, Partial Perimeter Vs. Full Perimeter, Stay Shunting, Hardwired, Wireless And Hybrid Systems, Telephone Line Security Options, Smoke Detection, Heat Detection, Carbon Monoxide Detection, Gas Detection, Wet And Dry Sprinkler Systems, Exceeding Code Requirements And Case Studies. Participants: New Jersey Burglar And/Or Fire Alarm License Holders From The Following Companies: Lyndhurst Security, Jen-Kare, Don't Be Alarmed, Discover Security, Sherlock Security, Pro-Tech Systems, Quality Alarm, A&R Alarm, Digital Security, Hawk Reliable, IEH Communications, American Alarm Association, North Jersey Security, Digital Reaction, Twin Security, Cencom, Digitalcasa, JV Security, Sentinel Security, International Alarm, Active Alarm, Stahl Security, ADT, Coastal Security, Janmar And PE Security.
- February 2009, Keynote Speaker, Alarm Science, Connecticut Alarm And Systems Integrators Association (CASIA), Hamden, Connecticut. Topics: NFPA Standards, UL Standards, Equipment Manufacturers Specifications, Industry Standards, The National Electrical Code (NEC), Nationally Recognized Testing Laboratories (NRTL), Methodologies Regarding The Proper Design, Application, Programming, Installation, Sales, Service, Maintenance And Central Station Monitoring, Medical Alarm Systems, The Crime Triangle, Physical Security Standards, Crime Prevention Through Environmental Design (CPTED), Case Studies, Telephone Line Security, Telephone Line Fault Monitor Configurations, Carbon Monoxide Detectors And Central Station Policies, Procedures And Protocols. Participants: Presidents, Senior Management, Sales

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Personnel, Installers, Technicians, NICET Certified Technicians, Central Station Operators And Managers Representing One Or More Of The Following Companies: Advanced Electronic Systems, ASP Security, AlarmSystems, Inc., Alert Security, Inc., Alarms By Precision, Berkshire Alarm, CT Home Automation, Dubaldo Security Systems, EBC Security, LLC, FBN Security Company, LLC, Fire Control Service Company, Inc., Fireworks, LLC, MCI Security, Monitor Controls, Mule Security & Electric, RK Electronic Services, LLC, Safe Home Security, Security Solutions, Security Specialists, Sentry Security, Sterling Security, Systems By Walsh, The Alarm Company, United Alarm Services, Inc., VIP Security & Consulting, Inc. And Welte Electrical Systems.

- February 2009, Instructor, Alarm Science Boot Camp, Bay Alarm Company, Pacheco, California. Topics: Case Studies, Sales, Installation, And Central Station Monitoring Policies And Procedures, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, The National Electrical Code, Nationally Recognized Industry Standards And Practices, Fire Science, Smoke And Heat Detection Systems, Carbon Monoxide And Gas Detectors, The Security Survey, Design, Installation, Application, Programming, Testing, Service, Maintenance And Central Station Monitoring, Ambush And Panic Systems, Inherent Safeguards, Service Calls, Stay Shunting, Machine Wired Screens, Automated And Supervised Signaling And Testing, Polling Requirements, UL Certificated Systems, Telephone Line Security, High-Risk High Burglary Exposure Premises And Systems, Circumvention Techniques, Existing Systems, Takeovers, Upgrades, Technical And Operational Analysis Of Alarm Equipment And Functionality, Low And High Temperature Detection Systems, Water Detection Systems, Medical Alarm Systems, Physical Security And CPTED, NFPA Acceptance And Reacceptance Testing, Functional And Sensitivity Testing, VOIP And DSL, RJ-31X Jack And Telephone Line Seizure, NFPA 72[®], Code Requirements And Interpretation, And Alarm System Defects And Irregularities. Participants: Vice President Of Code Safety Compliance, Field System Designers, Senior System Designers, Southern California Corporate Accounts Sales Managers, Project Managers I, Project Managers II, Vice President Of Sales And Marketing, Trainers, Inspectors, Customer Care Managers, Central Station Customer Service III, Center Station Supervisors, Alarm Dispatch Managers, Vice President Of Monitoring Services, Corporate Project Managers, Field Support Supervisors, Operations Managers, Regional Branch Managers, Installation Managers, Sales Managers, Branch Managers, Field System Designers, Service And Installation Managers, Field Supervisors, Residential Sales Managers, Commercial Sales Managers And Co-Presidents.
- February 2009, Instructor, Fire Alarm Science Boot Camp, Washington Township Fire Department, Sewell, New Jersey. Topics: Basic Overview Of Fire Alarm System Plans And Approvals, Conventional, Addressable And Analog Addressable Systems, Carbon Monoxide And Gas Detection Exposure Testing, Equipment System Options- Recipe For Disaster?, 25 Principles Of Alarm Science, Uniform Fire Code, New Jersey State Fire Prevention Code, Department Of Law And Public Safety Division Of Consumer Affairs, Board Of Examiners Of Electrical Contractors Statues And Regulations, Inherent Safeguards, Wiring Methods, Inspections, Functional And Reliable Life Expectancy Of Initiating Devices, Identifying Defects And Irregularities In Fire Alarm System Design, Programming, Installation, And Monitoring, NFPA 72^{®40}. Paperwork And Documentation, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Testing And Inspection Requirements, Common Defects Found In Fire Alarm System Design, Programming, Application, Selection, Installation, Testing, Service, Maintenance And Monitoring, Case Studies Where Fire Alarm Systems Were Reported To Fail, And The Reasons Why, Demonstrative Equipment, Arson Investigations: Utilizing Alarm Systems As A Silent Witness To The Event. Participants: Fire Chief, Lieutenant, Code Official And Firefighters.

⁴⁰ Registered trademark of The National Fire Protection Association (NFPA).

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- January 2009, Instructor, Alarm Science Boot Camp, American Alarm And Communications, Incorporated, Arlington, Massachusetts. Topics: Case Studies, Sales, Installation, And Central Station Monitoring Policies And Procedures, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, The National Electrical Code, Nationally Recognized Industry Standards And Practices, Fire Science, Smoke And Heat Detection Systems, Carbon Monoxide And Gas Detectors, The Security Survey, Design, Installation, Application, Programming, Testing, Service, Maintenance And Central Station Monitoring, Ambush And Panic Systems, Inherent Safeguards, Service Calls, Stay Shunting, Machine Wired Screens, Automated And Supervised Signaling And Testing, Polling Requirements, UL Certificated Systems, Telephone Line Security, High-Risk High Burglary Exposure Premises And Systems, Circumvention Techniques, Existing Systems, Takeovers, Upgrades, Technical And Operational Analysis Of Alarm Equipment And Functionality, Low And High Temperature Detection Systems, Water Detection Systems, Medical Alarm Systems, Physical Security And CPTED, NFPA Acceptance And Reacceptance Testing, Functional And Sensitivity Testing, VOIP And DSL, RJ-31X Jack And Telephone Line Seizure, NFPA 72®, Code Requirements And Interpretation, And Alarm System Defects And Irregularities. Participants: Service And Installation Technicians, NICET Certified Technicians, Sales, Management And Central Station Operators, President And Vice President Of American Alarm And Communications, Incorporated. December 2008, Speaker, Case Studies Of Alarm Liability, Membership Meeting Of The New Jersey Chapter Of The Society Of Fire Protection Engineers⁴¹, East Hanover, New Jersey. Topics: Case Studies, Duties Of An Alarm Contractor, The Security Survey, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Security System Design, Application, Recommendations, Sales, Installation, Service, Testing, Maintenance, Inspections And Monitoring, Types Of Line And Wireless Based Telephone Line Security Technologies, Fire Alarm Systems, Life Safety Systems, Fire Alarm Science, Obscuration And Stratification, Carbon Monoxide Systems, Installation Policies And Procedures, Central Station Monitoring Policies And Procedures, Connect To Existing Systems And Takeovers, And Training And Supervision. Participants: RJA Group, Risk Logic, Inc., United Fire Protection, GB Risk, Cintas, FA Associates, Willis HRH, FM Global, National Fire Sprinkler Associates, City Fire, Inc., Johnson & Johnson, Hoffman Laroche, Survivor Fire, Affiliated FM And XL Insurance.
- November 2008, Instructor, Alarm Science Boot Camp, Lowitt Alarms, Hicksville, New York. Topics: Case Studies, Sales, Installation, And Central Station Monitoring Policies And Procedures, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, The National Electrical Code, Nationally Recognized Industry Standards And Practices, Fire Science, Smoke And Heat Detection Systems, Carbon Monoxide And Gas Detectors, The Security Survey, Design, Installation, Application, Programming, Testing, Service, Maintenance And Central Station Monitoring, Ambush And Panic Systems, Inherent Safeguards, Service Calls, Stay Shunting, Machine Wired Screens, Automated And Supervised Signaling And Testing, Polling Requirements, UL Certificated Systems, Telephone Line Security, High-Risk High Burglary Exposure Premises And Systems, Circumvention Techniques, Existing Systems, Takeovers, Upgrades, Technical And Operational Analysis Of Alarm Equipment And Functionality, Low And High Temperature Detection Systems, Water Detection Systems, Medical Alarm Systems And Nurse Call, CCTV And Access Control Systems, Physical Security And CPTED, NFPA Acceptance And Reacceptance Testing, Functional And Sensitivity Testing, VOIP And DSL, RJ 31X Jack And Telephone Line Seizure, NFPA 72®, Code Requirements And Interpretation, And Alarm System Defects And Irregularities. Participants: Employees From All Divisions Of Company, Field Technicians, Central Station Manager, Central Station Dispatchers, Supervisors, Sales Consultants, Installation Manager, Service Manager, Office Personnel And President Of Lowitt Alarms.

⁴¹ The NJ Chapter, part of the National Society of Fire Protection Engineers headquartered in Bethesda, Maryland, is a group of fire protection and allied professionals dedicated to advancing the art and science of Fire Protection Engineering, maintaining a high ethical standard among its members, and fostering Fire Protection Engineering education.

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- November 2008, Instructor, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, Metrotech Center, JP Morgan Chase, Brooklyn, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures. Participants: New York City Police And Crime Prevention Officers.
- May 2008, Instructor, Fire Alarm Science Boot Camp, Kean University, Presented By New Jersey Department Of Community Affairs, Division Of Fire Safety, In Cooperation With Kean University Fire Safety Training Program, Union, New Jersey. Topics: Basic Overview Of Fire Alarm System Plans And Approvals, Conventional, Addressable And Analog Addressable Systems, Carbon Monoxide And Gas Detection Exposure Testing, Equipment System Options- Recipe For Disaster?, 25 Principles Of Alarm Science, Uniform Fire Code, New Jersey State Fire Prevention Code, Department Of Law And Public Safety Division Of Consumer Affairs, Board Of Examiners Of Electrical Contractors Statues And Regulations, Inherent Safeguards, Wiring Methods, Inspections, Functional And Reliable Life Expectancy Of Initiating Devices, Identifying Defects And Irregularities In Fire Alarm System Design, Programming, Installation, And Monitoring, NFPA 72®⁴², Paperwork And Documentation, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Testing And Inspection Requirements, Common Defects Found In Fire Alarm System Design, Programming, Application, Selection, Installation, Testing, Service, Maintenance And Monitoring, Case Studies Where Fire Alarm Systems Were Reported To Fail, And The Reasons Why, Demonstrative Equipment, Arson Investigations: Utilizing Alarm Systems As A Silent Witness To The Event. Participants: Construction Officials, Fire Inspectors, Bureau Of Training & Fire Safety Lieutenants, Fire Investigators, Fire Sub Code Officials, Fire Officials, Fire Department Chiefs, Fire Department Lieutenants, Fire Marshals, Central Station Supervisors, Code Specialists, Property Risk Control Executives, Alarm Contractors, NICET Certified Technicians, Fire Safety Directors And Fire & Housing Officials.
- November 2008, Instructor, Your Central Station Operator & Company On Trial!, Ways To Help Minimize Your Liability, When Providing Central Station Monitoring Services, Central Station Alarm Association (CSAA) Fall Operations Management Seminar: Destination: Success, Peabody Massachusetts. Topics: Duties Of A Central Station Operator, Central Station Supervisor, And Central Station, Case Studies, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Policies And Procedures, Customs And Habits, The Importance Of Clear, Complete, And Critical Information, Dialogue, Training, Complacency, And Urgency When Dispatching Alarm Signals, Opening And Closing Signals, Telephone Line Security, Carbon Monoxide Detectors, Smoke Detectors, System Testing, Default Instructions, The Dangers Of Taking A One Size Fits All Approach To Central Station Monitoring, 25 Principles Of Alarm Science, PERS, Medical Alarm Systems And How To Properly Address Supervision Of Central Station Operators When Monitoring Security And Fire Alarm System. Conference Participants: Security Partners, ADS Security, Vallance Security,

⁴² Registered trademark of The National Fire Protection Association (NFPA).

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Seacoast Security, Rapid Response Monitoring, Diebold, C.O.P.S. Monitoring, Southwest Dispatch Center, Gillmore Security Systems, Graham Alarm Monitoring, Digicom, Inc., United Central Control, Digital Security Controls (DSC), E.P.S., Giant Food, Vector Security, Inc., The Command Center, Inc., RFI Security, Inc., Holmes Electric Security Systems, Monitronics, Centurytel Security, The Protection Bureau, Sur-Gard, Central Station Alarm Association, Security Alarm Monitoring, Waste Management, Avantguard Monitoring, Certified System Design, LLC, Sebastian, State Farm Insurance, American Alarm & Communications, Inc., ADS Security, Alarm Detection Systems, Inc., Per Mar Security Services, Bay Alarm Company, Bold Technologies, Ltd, Security Partners, Monitoring America Alarm Co-Op, Fleenor Security Systems, United Monitoring Services, Centerpoint Technologies, Amherst Alarm, Inc. And DMC Security Services.

- October 2008, Speaker, Your Company On Trial, You Have Been Served⁴³, Central Station Alarm Association 2008 Annual Meeting (CSAA), Grand Cayman Islands. *This Seminar Is Designed For High Level Executives In The Alarm Industry. It Will Be Very Fast Paced, Technical, And Scientific And Is Full Of Lots Of Great Forensic Alarm Information Which Can Be Immediately Implemented For Any Size Alarm Company. It Will Also Cover A Broad Spectrum Of What CSAA Members Encounter In Their Day-To-Day Business Operations.* Topics: Duties Of An Alarm Contractor, Duties Of An Alarm Technician, Case Studies, Equipment Manufacturer's Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Telephone Line Security Methodologies, Line Fault Monitors, The Security Survey, Identification Of Risks And Vulnerabilities, Actions That Should Be Taken For High Risk Environments, The 25 Principles Of Alarm Science, Audibility Concerns For Security And Fire Alarm Systems, Recommendations Made, The Proper Training And Supervision Of All Persons Involved In The Sales, Design, Application, Programming, Installation, Service, Maintenance, Inspection, Testing, And Monitoring Of Security And Fire Alarm Systems, The Crime Triangle, Perimeter Detection Devices, Glassbreak Detection Devices, Interior Detection Devices, Hardwired And Wireless Initiating Detection Devices, Low Temperature Sensors, Carbon Monoxide, Gas And Smoke Detection Sensors, Medical Alarm Systems, Inherent Safeguards, Functional, Reliable, Technical And Operational Life Expectancy Of Carbon Monoxide, Smoke Detectors And Alarm Equipment, Open And Obvious Risks, The Criticality Of Testing Security And Fire Alarm Systems, And Ambush And Stay Shunting Dangers. Conference Participants: A1/Knight Security, Ackerman Security Systems, Acme Protective Systems, Ltd./APS, ADI, ADS Security, ADT Security Services, Incorporated, AES-Intellinet, Affiliated Central Station, Alarm Detection Systems, Alarmco, Incorporated, Alert Alarm Of Hawaii, Altronix Corporation, American Alarm & Communications, Incorporated, Amherst Alarm Inc, APCO International, Incorporated, ASG Security, Axis Communications, Bay Alarm Company, Berrian Insurance Group, Blooston, Mordkofsky, Dickens, Duffy & Prendergast, Bold Technologies, Ltd., Bosch Security Systems, Buchanan Ingersoll & Rooney PC, Bud Wulforst, C.O.P.S. Monitoring, Central Station Alarm Association, CIA Security, Citizens Bank, Davis Marketing Group, Denver Burglar, Devew Electronics, DGA Security Systems, Incorporated, Diebold, Incorporated, Digital Security Controls (DSC)/Surgard, DMC Security Services, Incorporated, DMP, E-Data Corporation, Electronix Systems C.S.A., Incorporated, Expedeum, Incorporated, Fleenor Security Systems, GE Security, Guardian Alarm Company, Honeywell Security Group, Innovative Business Software, Intelligent Technology, Incorporated, International Association Of Chiefs Of Police (IACP), International Association Of Fire Chiefs (IAFC), Intertech Security, Intertek, Kleinbard, Bell & Brecker, LLP, L.T. Fiore, Incorporated, Lowitt Alarms & Security Systems, Incorporated, LRG Marketing Communications, Mace Security, Merchants Alarm Systems, Michael J. Kelly Insurance Agency, Micro Key Software, Incorporated, Mitchell, Silberberg & Knupp, Monitoring America Alarm Co-Op, NAPCO Security Group, National Burglar & Fire Alarm Association (NBFAA), National Fire Protection Association (NFPA), National Sheriff's Association (NSA), Niscayah, Incorporated, OPTEX, Incorporated, Ozvision America, Pacific Alarm Systems, Incorporated, Peak Alarm Company, Incorporated, RAM Capital Corporation, Ray Adams, Reliance Protection, Incorporated, RSI Alarm-Videofied, S.E.M. Security Systems, SAFE Security, SDA Security

⁴³ Sponsored by Bosch Security Systems.

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Systems, Incorporated, Secure Global Solutions, LLC, Secure-I, Security Central, Incorporated, Security Equipment, Incorporated, Security Network Of America, Security Networks, LLC, Sedona Office, Sentry Watch, Incorporated, SIAC, Incorporated, SPECO Technologies, Stanley Convergent Security Solutions, Supreme Security Systems, Incorporated, Sur-Gard/DSC, SVI Systems, Incorporated, System Sensor, The Attrition Busters, The CMOOR Group, The Private Bank, Tri-Ed Distribution, Incorporated, Tyco Fire & Security/ADT, Underwriters Laboratories, Incorporated (UL), United Monitoring Services, Vector Security, Incorporated, Verifier Capital, Visonic Americas, Washington Alarm And Wayne Alarm Systems, Incorporated.

- October 2008, Instructor, Fire Alarm Science Boot Camp, Kean University, Presented By New Jersey Department Of Community Affairs, Division Of Fire Safety, In Cooperation With Kean University Fire Safety Training Program, Blackwood, New Jersey.⁴⁴ Continuing Education Units (CEU) Awarded In Uniform Fire Code Technical, UCC Reciprocal Technical And Fire Instructor. Topics: Basic Overview Of Fire Alarm System Plans And Approvals, Conventional, Addressable And Analog Addressable Systems, Carbon Monoxide And Gas Detection Exposure Testing, Equipment System Options- Recipe For Disaster?, 25 Principles Of Alarm Science, Uniform Fire Code, New Jersey State Fire Prevention Code, Department Of Law And Public Safety Division Of Consumer Affairs, Board Of Examiners Of Electrical Contractors Statues And Regulations, Inherent Safeguards, Wiring Methods, Inspections, Functional And Reliable Life Expectancy Of Initiating Devices, Identifying Defects And Irregularities In Fire Alarm System Design, Programming, Installation, And Monitoring, NFPA 72⁴⁵, Paperwork And Documentation, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Testing And Inspection Requirements, Common Defects Found In Fire Alarm System Design, Programming, Application, Selection, Installation, Testing, Service, Maintenance And Monitoring, Case Studies Where Fire Alarm Systems Were Reported To Fail, And The Reasons Why, Demonstrative Equipment, Arson Investigations: Utilizing Alarm Systems As A Silent Witness To The Event. Participants: Firefighters, Fire Chiefs, District Captains, Training Officers, Fire Marshals, And Fire Inspectors.
- June, 2008, Instructor, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, Metrotech Center, JP Morgan Chase, Brooklyn, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures. Participants: New York City Police Officers.
- May 2008, Instructor, Fire Alarm Science Boot Camp, Kean University, Presented By New Jersey Department Of Community Affairs, Division Of Fire Safety, In Cooperation With Kean University Fire Safety Training Program, Union, New Jersey. Topics: Basic Overview Of Fire Alarm System Plans And Approvals, Conventional, Addressable And Analog Addressable Systems, Carbon Monoxide And Gas Detection Exposure

⁴⁴ First Instructor at the new state-of-the-art academic training facility. The Academy operations are managed by the Camden County Fire Marshal's Office which provides a full-time director and support staff for daily operations.

⁴⁵ Registered trademark of The National Fire Protection Association (NFPA).

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Testing, Equipment System Options-Recipe For Disaster?, 25 Principles Of Alarm Science, Uniform Fire Code, New Jersey State Fire Prevention Code, Department Of Law And Public Safety Division Of Consumer Affairs, Board Of Examiners Of Electrical Contractors Statutes And Regulations, Inherent Safeguards, Wiring Methods, Inspections, Functional And Reliable Life Expectancy Of Initiating Devices, Identifying Defects And Irregularities In Fire Alarm System Design, Programming, Installation, And Monitoring, NFPA 72®⁴⁶, Paperwork And Documentation, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Testing And Inspection Requirements, Common Defects Found In Fire Alarm System Design, Programming, Application, Selection, Installation, Testing, Service, Maintenance And Monitoring, Case Studies Where Fire Alarm Systems Were Reported To Fail, And The Reasons Why, Demonstrative Equipment, Arson Investigations: Utilizing Alarm Systems As A Silent Witness To The Event. Participants: Construction Officials, Fire Inspectors, Bureau Of Training & Fire Safety Lieutenants, Fire Investigators, Fire Sub Code Officials, Fire Officials, Fire Department Chiefs, Fire Department Lieutenants, Fire Marshals, Central Station Supervisors, Code Specialists, Property Risk Control Executives, Alarm Contractors, NICET Certified Technicians, Fire Safety Directors And Fire & Housing Officials.

- May 2008, Instructor, PBFAA- Pennsylvania Burglar And Fire Alarm 26th Annual Membership Meeting & Exposition, Alarm Science Mini Boot Camp, Trevoze, Pennsylvania. Topics: Your Company On Trial, Duties Of An Alarm Contractor, Design, Application, Programming, Installation, Placement, Service, Maintenance, Testing, And Monitoring Of Residential, Commercial, And Industrial Security Systems, Alarm Science, Junk Science, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, NFPA 72®, Fire Science, Case Studies Where The Alarm System Was Reported To Fail, And The Reasons Why, Equipment System Options- Recipe For Disaster?, Demonstrative Equipment, Carbon Monoxide And Gas Detection Systems, The Crime Triangle, The Security Survey, Security Methodologies, CPTED And Electronic Countermeasures To Highly Sophisticated Burglary Attacks, Critical Detection Points (CDP), Telephone Line Security Methodologies, Environmental Monitoring, UL Listed Central Station Monitoring Policies And Procedures, The UL Certificate, And Ways To Help Lower Your Companies Liability When Alarm Contracting. Participants: The President And Board Members Of The PBFAA, Alarm Contractors, Technicians, Certified Protection Professionals, Central Station Managers, And NICET Certified Technicians.
- April 2008, Instructor, Alarm Science Boot Camp, Illinois Electronic Security Association (IESA), Elk Grove Village, Illinois. Topics: The 25 Principles Of Alarm Science, Security Surveys, Alarm Company Documentation- Training And Supervision, Alarm Science Or Junk Science, Duties Of An Alarm Contractor Serious Defects And Irregularities In Security And Fire Alarm System, Advance Fire Science Methodologies And Fire Alarm Science, Design, Installation, Application, Programming, Installation, Testing, Service, Maintenance, And Monitoring, Takeovers And Upgrades, Equipment System Options- Recipe For Disaster?, Reliable And Functional Life Expectancy On Initiating Devices, The Authority Having Jurisdiction, NFPA 72®, Recessed Contacts, Fire Code Violations, Increased Liability And Loss Potential, What To Do When A Customer Does Not Accept What You Recommend, Low Temperature Detection Systems, Case Studies, Carbon Monoxide Detection, Relay Button Vs. Exposure Testing, NFPA Standards, UL Standards, Equipment Manufacturers Specifications, UL Certificates, Nationally Recognized Industry Standards And Practices, Your Employees On Trial-A Mock Demonstration, Functional Vs. Sensitivity Testing On Smoke Detection Systems, High-Risk High-Burglary Exposure Security, The Crime Triangle, CPTED And Highly Skilled Burglary Circumvention Techniques & Effective Countermeasures. Participants: Alarm Company Operations Managers, Presidents, Vice Presidents, Sales Managers, Alarm Division Managers, Technicians, Installers, Installations Managers, Service Managers And NICET Certified Technicians.

⁴⁶ Registered trademark of The National Fire Protection Association (NFPA).

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- April 2008, Instructor, Alarm Science Boot Camp, Alarm Detection Systems, Incorporated, Aurora Illinois. Topics: The 25 Principles Of Alarm Science, Security Surveys, Alarm Company Documentation- Training And Supervision, Alarm Science Or Junk Science, Duties Of An Alarm Contractor Serious Defects And Irregularities In Security And Fire Alarm System, Advance Fire Science Methodologies And Fire Alarm Science, Design, Installation, Application, Programming, Installation, Testing, Service, Maintenance, And Monitoring, Takeovers And Upgrades, Equipment System Options-Recipe For Disaster?, Reliable And Functional Life Expectancy On Initiating Devices, The Authority Having Jurisdiction, NFPA 72®, Recessed Contacts, Fire Code Violations And Increased Liability And Loss Potential, What To Do When A Customer Does Not Accept What You Recommend, Low Temperature Detection Systems, Case Studies, Carbon Monoxide Detection, Relay Button Vs. Exposure Testing, NFPA Standards, UL Standards, Equipment Manufacturers Specifications, UL Certificates, Nationally Recognized Industry Standards And Practices, Your Employees On Trial- A Mock Demonstration, Functional Vs. Sensitivity Testing On Smoke Detection Systems, HighRisk High-Burglary Exposure Security, The Crime Triangle, CPTED And Highly Skilled Burglarious Circumvention Techniques & Effective Countermeasures. Participants: Alarm Company Operations Managers, Vice Presidents, Sales Managers, Alarm Division Managers, Technicians, Installers, Installations Managers, Service Managers And NICET Certified Technicians.
- February 2007, Keynote Speaker, Case Studies: Your Company On Trial, Connecticut Alarm And Systems Integrators Association (CASIA), Hamden, Connecticut. Topics: Case Studies, Duties Of An Alarm Contractor, The Security Survey, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Security System Design, Application, Recommendations, Sales, Installation, Service, Testing, Maintenance, Inspections And Monitoring, Types Of Line And Wireless Based Telephone Line Security Technologies, Fire Alarm Systems, Life Safety Systems, Fire Alarm Science, Obscuration And Stratification, Carbon Monoxide Systems, Installation Policies And Procedures, Central Station Monitoring Policies And Procedures, Connect To Existing Systems And Takeovers, And Training And Supervision. Participants: President And Board Members Of The Connecticut Alarm And Systems Integrators Association, Equipment Manufacturers Representatives, And Alarm Company Presidents, Owners And Technicians Including NICET Certified Technicians.
- November 2007, Instructor, Fire Alarm Science Boot Camp, Passaic County Fire Academy, Presented By New Jersey Department Of Community Affairs, Division Of Fire Safety, In Cooperation With Kean University Fire Safety Training Program, Wayne, New Jersey. Topics: Basic Overview Of Fire Alarm System Plans And Approvals, Conventional, Addressable And Analog Addressable Systems, Carbon Monoxide And Gas Detection Exposure Testing, 25 Principles Of Alarm Science, Uniform Fire Code, New Jersey State Fire Prevention Code, Department Of Law And Public Safety Division Of Consumer Affairs, Board Of Examiners Of Electrical Contractors Statutes And Regulations, Inherent Safeguards, Wiring Methods, Inspections, Functional And Reliable Life Expectancy Of Initiating Devices, Identifying Defects And Irregularities In Fire Alarm System Design, Programming, Installation, And Monitoring, NFPA 72®, Paperwork And Documentation, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Testing And Inspection Requirements, Common Defects Found In Fire Alarm System Design, Application, Selection, Installation, Testing, Service, Maintenance And Monitoring, Case Studies Where Fire Alarm Systems Failed And The Reasons Why, Arson Investigations: Utilizing Alarm Systems As A Silent Witness To The Event. Participants: Deputy Fire Chiefs, Battalion Chiefs, Assistant Fire Chiefs, Fire Department Captains, Fire Inspectors, Fire Officials, Constructions Officials, Zoning Officers, Service Directors, Facilities Managers And PBA Delegates.
- November 2007, Instructor, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, Metrotech Center, JP Morgan Chase, Brooklyn, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire

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Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures. Participants: New York City Police Officers From The 107th, 45th, 63rd, 79th, 100th, 42nd, 7th, 109th, 101st And 25th, Transit District 30th And 34th Precincts, Crime Prevention Section, Patrol Borough Manhattan North, New York City Police Sergeants From The Criminal Records Section, Police Academy, Department Of Citywide Administrative Services, New York City Detectives Manhattan Warrants Squad, Manhattan/Bronx Juvenile Crimes Squad, Major Case Unit, Sloan Kettering Security Officers, New York City School Safety Division Administrators, New York City Police Officers Community Affairs Bureau Representatives, New York City Police Athletic League Representatives And President Of CHB Industries.

- October 2007, Instructor, New York City Fire Department, Bureau Of Fire Investigation, Fire Marshal Training Unit, Fire Marshal Academy Class 2 Of 2007, Special Operations Command, Brooklyn, New York, Alarm Science Boot Camp. Topics: Basic Overview Of Fire Alarm System Plans And Approvals, Conventional, Addressable, And Analog Addressable Systems, Carbon Monoxide And Gas Detection Functional And Exposure Testing, 25 Principles Of Alarm Science, Final Inspections, New York State Department Of State Division Of Licensing Services, Article 6-D General Business Law, Business Of Installing, Servicing, Or Maintaining Security Or Fire Alarm Systems, Title 19 Security And Fire Alarm Systems, Part 195 Licensing Regulations For The Business Of Installing, Servicing, Or Maintaining Security Or Fire Alarm Systems, The New York City Fire Law Handbook, Title 15 Fire Prevention Control And Title 27-Chapter 4, Fire Prevention Code Of The New York City Administrative Code, International Fire Code, Inherent Safeguards, Wiring Methods, Inspections, Functional And Reliable Life Expectancy Of Initiating Devices, Identifying Defects And Irregularities In Fire Alarm System Design, Programming, Installation, Service, Maintenance And Monitoring, NFPA 72®, Paperwork And Documentation, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Testing And Inspection Requirements, Common Defects Found In Fire Alarm System Design, Application, Selection, Installation, Testing, Service, Maintenance And Monitoring, Case Studies Where Fire Alarm Systems Failed And The Reasons Why, Arson Investigations: Utilizing Alarm Systems As A Silent Witness To The Event, And Forensic Civil And Criminal Investigations. Participants: Fire Marshals And Supervisors.
- October 2007, Instructor, Fire Alarm Science Boot Camp, Middlesex County Fire Academy, Presented By New Jersey Department Of Community Affairs, Division Of Fire Safety, In Cooperation With Kean University Fire Safety Training Program, Sayreville, New Jersey. Topics: Basic Overview Of Fire Alarm System Plans And Approvals, Conventional, Addressable And Analog Addressable Systems, Carbon Monoxide And Gas Detection Exposure Testing, 25 Principles Of Alarm Science, Uniform Fire Code, New Jersey State Fire Prevention Code, Department Of Law And Public Safety Division Of Consumer Affairs, Board Of Examiners Of Electrical Contractors Statutes And Regulations, Inherent Safeguards, Wiring Methods, Inspections, Functional And Reliable Life Expectancy Of Initiating Devices, Identifying Defects And Irregularities In Fire Alarm System Design, Programming, Installation, And Monitoring, NFPA 72®, Paperwork And Documentation, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Testing And Inspection Requirements, Common Defects Found In Fire Alarm System Design, Application, Selection, Installation, Testing, Service, Maintenance And Monitoring, Case Studies Where Fire Alarm Systems Failed And The Reasons Why, Arson Investigations: Utilizing Alarm Systems As A Silent Witness To The Event. Participants:

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Fire Officials, Fire Inspectors, Fire Marshals, Fire Instructors, Electrical Contractors, Fire Sub-Code Officials, Insurance Adjusters, Training Supervisors, Fire Captains, Fire Sub Code/Housing Inspectors.

- October 2007, Guest Speaker, New Jersey Burglar And Fire Alarm Association (NJBFAA) Northern Region Meeting, Saddle Brook, New Jersey. Case Studies Of Alarm Liability. Topics: Alarm Science, New Jersey Alarm Contracting Laws, Case Studies Of Alarm Liability, The Security Survey, Fire Alarm Systems, Standards, And NFPA 72®, The Authority Having Jurisdiction, Duties Of An Alarm Contractor, End Of Line Resistor (EOLR) Supervision, Normally Open And Normally Closed Protective Loop Circuit Supervision Methodologies, Telephone Line Seizure, VOIP, Power Supervision Relay, Two-Wire Smoke Detector Compatibility Verification, Identification Of Defects And Irregularities In Security System Design, Application, Programming, Installation, Service, Testing, Inspection, Repair, Maintenance And Remote Station Monitoring, Stay Shunting, Dialer Delay, Telephone Line Security, Radio Test Fail Conditions, Other Trouble Conditions, UL Standards, Equipment Manufacturers Specifications, Nationally Recognized Industry Standards And Practices, Techniques Utilized By The Criminal Element To Circumvent Security Systems, UL2034 And UL2075, Carbon Monoxide And Gas Detectors, High And Low Temperature Detection Devices, And Ambush And Panic Initiating Detection Devices. Participants: NICET Certified Technicians, Service And Installation Technicians, New Jersey And New York State Certified Alarm Contractors, New Jersey Burglar And Fire Alarm Association Board Members, Alarm Company Management, Owners, Equipment Manufacturers, Central Stations, And Manufacturers Representatives.
- August 2007, Instructor, DGA Security Systems, Inc. New York, New York. Alarm Science Boot Camp. Topics: Case Studies, Design, Sales, Installation, And Central Station Monitoring Policies And Procedures, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, The National Electrical Code, Nationally Recognized Industry Standards And Practices, Fire Science, Smoke And Heat Detection Systems, Carbon Monoxide And Gas Detectors, The Security Survey, Design, Installation, Application, Programming, Testing, Service, Maintenance And Central Station Monitoring, Ambush And Panic Systems, Inherent Safeguards, Service Calls, Stay Shunting, Machine Wired Screens, Automated And Supervised Signaling And Testing, Polling Requirements, UL Certificated Systems, Telephone Line Security, High-Risk High Burglary Exposure Premises And Systems, Circumvention Techniques, Existing Systems, Takeovers, Upgrades, Technical And Operational Analysis Of Alarm Equipment And Functionality, Low And High Temperature Detection Systems, Water Detection Systems, CCTV And Access Control Systems, Physical Security And CPTED, NFPA Acceptance And Reacceptance Testing, Functional And Sensitivity Testing, VOIP And DSL, RJ 31X Jack And Telephone Line Seizure, NFPA 72®, Code Requirements And Interpretation, And Alarm System Defects And Irregularities. Participants: President, Vice President, Senior Project Manager, Operations Manager, Installation Manager, Customer Service Manager, Vault Manager, Installation Manager, NICET Certified Technicians, Sales Manager And Senior Management.
- July 2007, Instructor, New York City Fire Department, Bureau Of Fire Investigation, Fire Marshal Training Unit, Fire Marshal Academy Class 1 Of 2007, Special Operations Command, Brooklyn, New York, Alarm Science Boot Camp. Topics: Basic Overview Of Fire Alarm System Plans And Approvals, Conventional, Addressable, And Analog Addressable Systems, Carbon Monoxide And Gas Detection Functional And Exposure Testing, 25 Principles Of Alarm Science, Final Inspections, New York State Department Of State Division Of Licensing Services, Article 6-D General Business Law, Business Of Installing, Servicing, Or Maintaining Security Or Fire Alarm Systems, Title 19 Security And Fire Alarm Systems, Part 195 Licensing Regulations For The Business Of Installing, Servicing, Or Maintaining Security Or Fire Alarm Systems, The New York City Fire Law Handbook, Title 15 Fire Prevention Control And Title 27-Chapter 4, Fire Prevention Code Of The New York City Administrative Code, International Fire Code, Inherent Safeguards, Wiring Methods, Inspections, Functional And Reliable Life Expectancy Of Initiating Devices, Identifying Defects And Irregularities In Fire Alarm System Design, Programming, Installation, Service, Maintenance And Monitoring, NFPA 72®, Paperwork And Documentation, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Testing And Inspection Requirements, Common Defects Found In Fire Alarm System Design, Application,

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Selection, Installation, Testing, Service, Maintenance And Monitoring, Case Studies Where Fire Alarm Systems Failed And The Reasons Why, Arson Investigations: Utilizing Alarm Systems As A Silent Witness To The Event, And Forensic Civil And Criminal Investigations. Participants: Fire Marshals And Supervisors.

- July 2007, Instructor, Vector Security Inc., Turf Valley Resort, Ellicott City, Maryland, Vector University- Minimizing Risk. Topics: Case Studies, 25 Principles Of Alarm Science, Duties Of An Alarm Contractor, Case Studies, Equipment Manufacturer's Specifications, NFPA Standards And NFPA 72®, UL Standards, Nationally Recognized Industry Standards And Practices, Security And Life Safety Initiating Devices, Standards Relating To System Design, Application, Sales, Installation, Programming, Service, Maintenance And Central Station Monitoring, Four Stages Of A Fire, Fire Science, Interpretation Of NEC, And The Requirements Mandated By The Authority Having Jurisdiction, Hardwired, Wireless And Hybrid Systems, Defects And Irregularities, Telephone Line Security, Carbon Monoxide, UL 2034 And UL 2075 And Gas Detection Devices, Interior Trap Detection, Dual Technology Inherent Safeguards, End Of Line Resistor Supervision, And Feed And Return Circuits, Functional And Sensitivity Testing, Detector Calibration And Exposure Testing, The Security Survey, Audible Notification Appliance Supervision, High Risk/High Burglary Exposure Premises, Circumvention Techniques Utilized By The Criminal Element, Existing Systems, Physical Security, Crime Prevention Through Environmental Design (CPTED), Sprinkler Systems, UL Certificated Systems, Workplace Violence, Parking Lot Concerns, Trucking Issues, System Inspection, Testing And Maintenance, NICET Curriculum, Glass Breakage Detection Methodologies And Devices, CCTV Systems And Remote View, Covert And Accessible Panic And Ambush Initiating Devices, Stay Shunting And System Programming Features And Options And Non-Sale Recommendations. Participants: Senior Vice President, Local And Regional Sales, Branch And Supervisory Managers.
- June 2007, Instructor, Vector Security, Inc., Wilkes-Barre, Pennsylvania, Alarm Science Boot Camp For Technicians. Topics: Case Studies, 25 Principles Of Alarm Science, Duties Of An Technician, Equipment Manufacturer's Specifications, NFPA Standards And NFPA 72®, UL Standards, Nationally Recognized Industry Standards And Practices, Security And Life Safety Initiating Devices, Standards Relating To System Design, Application, Sales, Installation, Programming, Service, Maintenance And Central Station Monitoring, Four Stages Of A Fire, Fire Science, Interpretation Of NEC, And The Requirements Mandated By The Authority Having Jurisdiction, Hardwired, Wireless And Hybrid Systems, Defects And Irregularities, Telephone Line Security, Carbon Monoxide, UL 2034 And UL 2075 And Gas Detection Devices, Interior Trap Detection, Dual Technology Inherent Safeguards, End Of Line Resistor Supervision, And Feed And Return Circuits, Functional And Sensitivity Testing, Detector Calibration And Exposure Testing, The Security Survey, Audible Notification Appliance Supervision, High Risk/High Burglary Exposure Premises, Circumvention Techniques Utilized By The Criminal Element, Existing Systems, Physical Security, Crime Prevention Through Environmental Design (CPTED), Sprinkler Systems, UL Certificated Systems, System Inspection, Testing And Maintenance, NICET Curriculum, Glass Breakage Detection Methodologies And Devices, CCTV Systems, Accessible Panic And Ambush Initiating Devices, Stay Shunting And System Programming Features And Options And Non-Sale Recommendations. Participants: Installers, Technicians, Service Personnel, NICET Certified Technicians And Installation Supervisors.
- June 2007, Presenter, SEAK, Hyannis, Massachusetts.
- June 2007, Instructor, PBFAA-Pennsylvania Burglar And Fire Alarm Association's 25th Anniversary Annual Membership Meeting & Exposition: Alarm Science Mini Boot Camp, Philadelphia, Pennsylvania. Topics: Duties Of An Alarm Contractor, Design, Application, Programming, Installation, Placement, Service, Maintenance, Testing, And Monitoring Of Residential, Commercial, And Industrial Security Systems, Alarm Science, Junk Science, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, NFPA 72®, Fire Science, Case Studies Where The Alarm System Was Reported To Fail, And The Reasons Why, Demonstrative Equipment, Carbon Monoxide And Gas Detection Systems, The Crime Triangle, The Security Survey, Security Methodologies, Electronic

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Countermeasures To Highly Sophisticated Burglary Attacks, Critical Detection Points, Telephone Line Security Methodologies, Environmental Monitoring, UL Listed Central Station Monitoring Policies And Procedures, The UL Certificate, And Ways To Help Lower Your Companies Liability When Alarm Contracting. Participants: The President And Board Members Of The PBFAA, Alarm Contractors, Technicians, Certified Protection Professionals, And NICET Certified Technicians.

- June, 2007, Instructor, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, Metrotech Center, JP Morgan Chase, Brooklyn, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures. Participants: Police Officers From The 5th, 7th, 17th, 24th, 47th, 61st, 62nd, 66th, 71st, 107th, 109th, 110th And 112th Precincts, Suffolk County Police Department Sergeant, Patrol Borough Queens North Sergeant, Manager Of The Police Athletic League, Manhattan South Task Force Captain, Manhattan North Narcotics Lieutenant, Transit Bureau Police Officer, Sloan Kettering Memorial Hospital Security Officer And Crime Prevention Lieutenant And Police Officers.
- June 2007, Instructor, Vector Security, Inc., Pittsburgh, Pennsylvania, Alarm Science Boot Camp For Technicians. Topics: Case Studies, 25 Principles Of Alarm Science, Duties Of A Technician, Equipment Manufacturer's Specifications, NFPA Standards And NFPA 72®, UL Standards, Nationally Recognized Industry Standards And Practices, Security And Life Safety Initiating Devices, Standards Relating To System Design, Application, Sales, Installation, Programming, Service, Maintenance And Central Station Monitoring, Four Stages Of A Fire, Fire Science, Interpretation Of NEC, And The Requirements Mandated By The Authority Having Jurisdiction, Hardwired, Wireless And Hybrid Systems, Defects And Irregularities, Telephone Line Security, Carbon Monoxide, UL 2034 And UL 2075 And Gas Detection Devices, Interior Trap Detection, Dual Technology Inherent Safeguards, End Of Line Resistor Supervision, And Feed And Return Circuits, Functional And Sensitivity Testing, Detector Calibration And Exposure Testing, The Security Survey, Audible Notification Appliance Supervision, High Risk/High Burglary Exposure Premises, Circumvention Techniques Utilized By The Criminal Element, Existing Systems, Physical Security, Crime Prevention Through Environmental Design (CPTED), Sprinkler Systems, UL Certificated Systems, System Inspection, Testing And Maintenance, NICET Curriculum, Glass Breakage Detection Methodologies And Devices, CCTV Systems, Accessible Panic And Ambush Initiating Devices, Stay Shunting And System Programming Features And Options And Non-Sale Recommendations. Participants: Installers, Technicians, Service Personnel, NICET Certified Technicians And Installation Supervisors.
- June 2007, Instructor, Vector Security, Inc., Philadelphia, Pennsylvania, Alarm Science Boot Camp For Technicians. Topics: Case Studies, 25 Principles Of Alarm Science, Duties Of An Technician, Equipment Manufacturer's Specifications, NFPA Standards And NFPA 72®, UL Standards, Nationally Recognized Industry Standards And Practices, Security And Life Safety Initiating Devices, Standards Relating To System Design, Application, Sales, Installation, Programming, Service, Maintenance And Central Station Monitoring, Four Stages Of A Fire, Fire Science, Interpretation Of NEC, And The Requirements Mandated By The Authority Having Jurisdiction, Hardwired, Wireless And Hybrid Systems, Defects And Irregularities, Telephone Line Security, Carbon Monoxide, UL 2034 And UL 2075 And Gas Detection Devices, Interior Trap

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Detection, Dual Technology Inherent Safeguards, End Of Line Resistor Supervision, And Feed And Return Circuits, Functional And Sensitivity Testing, Detector Calibration And Exposure Testing, The Security Survey, Audible Notification Appliance Supervision, High Risk/High Burglary Exposure Premises, Circumvention Techniques Utilized By The Criminal Element, Existing Systems, Physical Security, Crime Prevention Through Environmental Design (CPTED), Sprinkler Systems, UL Certificated Systems, System Inspection, Testing And Maintenance, NICET Curriculum, Glass Breakage Detection Methodologies And Devices, CCTV Systems, Accessible Panic And Ambush Initiating Devices, Stay Shunting And System Programming Features And Options And Non-Sale Recommendations. Participants: Installers, Technicians, Service Personnel, NICET Certified Technicians And Installation Supervisors.

- May 2007, Instructor, New York City Fire Department, Bureau Of Fire Investigation, Fire Marshal Training Unit, Fire Marshal Academy, Special Operations Command, Brooklyn, New York, Alarm Science Boot Camp. Topics: Basic Overview Of Fire Alarm System Plans And Approvals, Conventional, Addressable And Analog Addressable Systems, Carbon Monoxide And Gas Detection Functional And Exposure Testing, 25 Principles Of Alarm Science, Final Inspections, New York State Department Of State Division Of Licensing Services, Article 6-D General Business Law, Business Of Installing, Servicing, Or Maintaining Security Or Fire Alarm Systems, Title 19 Security And Fire Alarm Systems, Part 195 Licensing Regulations For The Business Of Installing, Servicing, Or Maintaining Security Or Fire Alarm Systems, The New York City Fire Law Handbook, Title 15 Fire Prevention Control And Title 27-Chapter 4, Fire Prevention Code [Of The New York City Administrative Code], International Fire Code, Inherent Safeguards, Wiring Methods, Inspections, Functional And Reliable Life Expectancy Of Initiating Devices, Identifying Defects And Irregularities In Fire Alarm System Design, Programming, Installation, And Monitoring, NFPA 72®, Paperwork And Documentation, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Testing And Inspection Requirements, Common Defects Found In Fire Alarm System Design, Application, Selection, Installation, Testing, Service, Maintenance And Monitoring, Case Studies Where Fire Alarm Systems Failed And The Reasons Why, Arson Investigations: Utilizing Alarm Systems As A Silent Witness To The Event, And Forensic Civil And Criminal Investigations. Participants: Fire Marshals And Supervisors.
- May 2007, Instructor, Vector Security, Inc., Princeton, New Jersey, Alarm Science Boot Camp For Technicians. Topics: Case Studies, 25 Principles Of Alarm Science, Duties Of An Technician, Equipment Manufacturer's Specifications, NFPA Standards And NFPA 72®, UL Standards, Nationally Recognized Industry Standards And Practices, Security And Life Safety Initiating Devices, Standards Relating To System Design, Application, Sales, Installation, Programming, Service, Maintenance And Central Station Monitoring, Four Stages Of A Fire, Fire Science, Interpretation Of NEC, And The Requirements Mandated By The Authority Having Jurisdiction, Hardwired, Wireless And Hybrid Systems, Defects And Irregularities, Telephone Line Security, Carbon Monoxide, UL 2034 And UL 2075 And Gas Detection Devices, Interior Trap Detection, Dual Technology Inherent Safeguards, End Of Line Resistor Supervision, And Feed And Return Circuits, Functional And Sensitivity Testing, Detector Calibration And Exposure Testing, The Security Survey, Audible Notification Appliance Supervision, High Risk/High Burglary Exposure Premises, Circumvention Techniques Utilized By The Criminal Element, Existing Systems, Physical Security, Crime Prevention Through Environmental Design (CPTED), Sprinkler Systems, UL Certificated Systems, System Inspection, Testing And Maintenance, NICET Curriculum, Glass Breakage Detection Methodologies And Devices, CCTV Systems, Accessible Panic And Ambush Initiating Devices, Stay Shunting And System Programming Features And Options And Non-Sale Recommendations. Participants: Installers, Technicians, Service Personnel, NICET Certified Technicians And Installation Supervisors.

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- May 2007, Instructor, Vector Security, Inc., Richmond, Virginia, Alarm Science Boot Camp For Technicians. Topics: Case Studies, 25 Principles Of Alarm Science, Duties Of An Technician, Equipment Manufacturer's Specifications, NFPA Standards And NFPA 72®, UL Standards, Nationally Recognized Industry Standards And Practices, Security And Life Safety Initiating Devices, Standards Relating To System Design, Application, Sales, Installation, Programming, Service, Maintenance And Central Station Monitoring, Four Stages Of A Fire, Fire Science, Interpretation Of NEC, And The Requirements Mandated By The Authority Having Jurisdiction, Hardwired, Wireless And Hybrid Systems, Defects And Irregularities, Telephone Line Security, Carbon Monoxide, UL 2034 And UL 2075 And Gas Detection Devices, Interior Trap Detection, Dual Technology Inherent Safeguards, End Of Line Resistor Supervision, And Feed And Return Circuits, Functional And Sensitivity Testing, Detector Calibration And Exposure Testing, The Security Survey, Audible Notification Appliance Supervision, High Risk/High Burglary Exposure Premises, Circumvention Techniques Utilized By The Criminal Element, Existing Systems, Physical Security, Crime Prevention Through Environmental Design (CPTED), Sprinkler Systems, UL Certificated Systems, System Inspection, Testing And Maintenance, NICET Curriculum, Glass Breakage Detection Methodologies And Devices, CCTV Systems, Accessible Panic And Ambush Initiating Devices, Stay Shunting And System Programming Features And Options And Non-Sale Recommendations. Participants: Installers, Technicians, Service Personnel, NICET Certified Technicians And Installation Supervisors.
- May 2007, Instructor, Vector Security Inc., Turf Valley Resort, Ellicott City, Maryland, Vector University-Alarm Science Boot Camp. Topics: Case Studies, 25 Principles Of Alarm Science, Duties Of An Alarm Contractor, Case Studies, Equipment Manufacturer's Specifications, NFPA Standards And NFPA 72®, UL Standards, Nationally Recognized Industry Standards And Practices, Security And Life Safety Initiating Devices, Standards Relating To System Design, Application, Sales, Installation, Programming, Service, Maintenance And Central Station Monitoring, Four Stages Of A Fire, Fire Science, Interpretation Of NEC, And The Requirements Mandated By The Authority Having Jurisdiction, Hardwired, Wireless And Hybrid Systems, Defects And Irregularities, Telephone Line Security, Carbon Monoxide, UL 2034 And UL 2075 And Gas Detection Devices, Interior Trap Detection, Dual Technology Inherent Safeguards, End Of Line Resistor Supervision, And Feed And Return Circuits, Functional And Sensitivity Testing, Detector Calibration And Exposure Testing, The Security Survey, Audible Notification Appliance Supervision, High Risk/High Burglary Exposure Premises, Circumvention Techniques Utilized By The Criminal Element, Existing Systems, Physical Security, Crime Prevention Through Environmental Design (CPTED), Sprinkler Systems, UL Certificated Systems, Workplace Violence, Parking Lot Concerns, Trucking Issues, System Inspection, Testing And Maintenance, NICET Curriculum, Glass Breakage Detection Methodologies And Devices, CCTV Systems And Remote View, Covert And Accessible Panic And Ambush Initiating Devices, Stay Shunting And System Programming Features And Options And Non-Sale Recommendations. Participants: Local And Regional Sales, Branch And Supervisory Managers.
- May 2007, Instructor, Alarm Science Boot Camp, Burlington County Emergency Services Training Center, Presented By New Jersey Department Of Community Affairs, Division Of Fire Safety, In Cooperation With Kean University Fire Safety Training Program, Mt. Holly, New Jersey. Topics: Basic Overview Of Fire Alarm System Plans And Approvals, Conventional, Addressable And Analog Addressable Systems, Carbon Monoxide And Gas Detection Exposure Testing, 25 Principles Of Alarm Science, Final Inspections, Uniform Fire Code, New Jersey State Fire Prevention Code, Department Of Law And Public Safety Division Of Consumer Affairs, Board Of Examiners Of Electrical Contractors Statues And Regulations, Inherent Safeguards, Wiring Methods, Inspections, Functional And Reliable Life Expectancy Of Initiating Devices, Identifying Defects And Irregularities In Fire Alarm System Design, Programming, Installation, And Monitoring, NFPA 72®, Paperwork And Documentation, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Testing And Inspection Requirements, Common Defects Found In Fire Alarm System Design, Application, Selection, Installation,

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Testing, Service, Maintenance And Monitoring, Case Studies Where Fire Alarm Systems Failed And The Reasons Why, Arson Investigations: Utilizing Alarm Systems As A Silent Witness To The Event. Participants: Fire Officials, Fire Inspectors, Fire Marshals, Fire Instructors, Electrical Contractors, Fire Sub-Code Officials, Consultants, Training Supervisors.

- April 2007, Instructor, Alarm Science Boot Camp, Bergen County Fire Academy, Presented By New Jersey Department Of Community Affairs, Division Of Fire Safety, In Cooperation With Kean University Fire Safety Training Program, Mahwah, New Jersey. Topics: Basic Overview Of Fire Alarm System Plans And Approvals, Conventional, Addressable And Analog Addressable Systems, Carbon Monoxide And Gas Detection Exposure Testing, 25 Principles Of Alarm Science, Uniform Fire Code, New Jersey State Fire Prevention Code, Department Of Law And Public Safety Division Of Consumer Affairs, Board Of Examiners Of Electrical Contractors Statues And Regulations, Inherent Safeguards, Wiring Methods, Inspections, Functional And Reliable Life Expectancy Of Initiating Devices, Identifying Defects And Irregularities In Fire Alarm System Design, Programming, Installation, And Monitoring, NFPA 72®, Paperwork And Documentation, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Testing And Inspection Requirements, Common Defects Found In Fire Alarm System Design, Application, Selection, Installation, Testing, Service, Maintenance And Monitoring, Case Studies Where Fire Alarm Systems Failed And The Reasons Why, Arson Investigations: Utilizing Alarm Systems As A Silent Witness To The Event. Participants: Fire Officials, Fire Inspectors, Fire Marshals, Fire Instructors, Electrical Contractors, Fire Sub-Code Officials, Insurance Adjusters, Training Supervisors, Fire Captains, Fire Sub Code/Housing Inspectors.
- April 2007, Instructor, Wayne Alarm Systems, Inc. Lynn, Massachusetts. Alarm Science Boot Camp: Topics: Case Studies, Sales, Installation, And Central Station Monitoring Policies And Procedures, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, The National Electrical Code, Nationally Recognized Industry Standards And Practices, Fire Science, Smoke And Heat Detection Systems, Carbon Monoxide And Gas Detectors, The Security Survey, Design, Installation, Application, Programming, Testing, Service, Maintenance And Central Station Monitoring, Ambush And Panic Systems, Inherent Safeguards, Service Calls, Stay Shunting, Machine Wired Screens, Automated And Supervised Signaling And Testing, Polling Requirements, UL Certificated Systems, Telephone Line Security, High-Risk High Burglary Exposure Premises And Systems, Circumvention Techniques, Existing Systems, Takeovers, Upgrades, Technical And Operational Analysis Of Alarm Equipment And Functionality, Low And High Temperature Detection Systems, Water Detection Systems, Medical Alarm Systems And Nurse Call, CCTV And Access Control Systems, Physical Security And CPTED, NFPA Acceptance And Reacceptance Testing, Functional And Sensitivity Testing, VOIP And DSL, RJ 31X Jack And Telephone Line Seizure, NFPA 72®, Code Requirements And Interpretation, And Alarm System Defects And Irregularities. Participants: Employees From All Divisions Of Company, Field Technicians, Central Station Dispatchers, Supervisors, Sales Consultants And Office Personnel, President Of Wayne Alarms, Subcontract Alarm Dealers.
- April 2007, Instructor, Vector Security Inc., Turf Valley Resort, Ellicott City, Maryland, Vector University- Alarm Science Boot Camp. Topics: Case Studies, 25 Principles Of Alarm Science, Duties Of An Alarm Contractor, Case Studies, Equipment Manufacturer's Specifications, NFPA Standards And NFPA 72®, UL Standards, Nationally Recognized Industry Standards And Practices, Security And Life Safety Initiating Devices, Standards Relating To System Design, Application, Sales, Installation, Programming, Service, Maintenance And Central Station Monitoring, Four Stages Of A Fire, Fire Science, Interpretation Of NEC, And The Requirements Mandated By The Authority Having Jurisdiction, Hardwired, Wireless And Hybrid Systems, Defects And Irregularities, Telephone Line Security, Carbon Monoxide, UL 2034 And UL 2075 And Gas Detection Devices, Interior Trap Detection, Dual Technology Inherent Safeguards, End Of Line Resistor Supervision, And Feed And Return Circuits, Functional And Sensitivity Testing, Detector Calibration And Exposure Testing, The Security Survey, Audible Notification Appliance Supervision, High Risk/High Burglary

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Exposure Premises, Circumvention Techniques Utilized By The Criminal Element, Existing Systems, Physical Security, Crime Prevention Through Environmental Design (CPTED), Sprinkler Systems, UL Certificated Systems, Workplace Violence, Parking Lot Concerns, Trucking Issues, System Inspection, Testing And Maintenance, NICET Curriculum, Glass Breakage Detection Methodologies And Devices, CCTV Systems And Remote View, Covert And Accessible Panic And Ambush Initiating Devices, Stay Shunting And System Programming Features And Options And Non-Sale Recommendations. Participants: Local And Regional Sales, Branch And Supervisory Managers.

- March 2007, Instructor, Alarm Science Boot Camp, University Of New Haven Fire Science Department, Fire Detection And Control Class, West Haven, Connecticut. Topics: Fire Alarm Science, Acceptable And Unacceptable Methodologies And Practices Of The Technical Community Of The Fire Alarm Industry., Alarm Contractor Duties, Recommendations, One Size Fit All Approach Methodology, Best Location Practice, State Licensing Laws, The Authority Having Jurisdiction, (AHJ), Fire Protection Handbook, Equipment Manufacturers Specifications, UL Standards, UL Listing, UL Labeling, The National Electrical Code (NEC), Fuel Loads, Incendiary Versus Accidental Fires, Utilizing An Alarm System As A Silent Witness To The Event, Tampering Of Fire Alarm Systems And Devices, NFPA Standards, Nationally Recognized Industry Standards And Practices, Case Studies, 25 Principles Of Alarm Science, The RJ-31 X Telephone Jack And Coupler Cord, Design, System Application, Programming, Service, Maintenance, And Remote Station Monitoring Of Security And Life Safety Systems. Defects And Irregularities In Fire Alarm System Design And Installation, System Options And Supervision, Equipment Placement And Location, End Of Line Resistor Supervision, Telephone Line Seizure, Power Supervision Relays, Automated And Supervised Test Signaling, Standby Time And Current Load Calculations, Two-Wire Smoke Detector Compatibility, Slave Digital Dialers, Telephone Tape Dialers- Serious Misapplication Of Technology, Hardwired, Hybrid, Wireless And Integrated Systems, Internal Event Log Data, Central And Remote Station Systems, Subscriber Database Information, Dispatch Instructions, Examination Of Forensic Evidence And Exemplar Equipment, NFPA 72®, Sprinkler Systems, Employee And Technician Training Requirements, Types Of Fire Alarm Systems: Residential, Commercial, And Industrial, Conventional, Addressable, Analog-Addressable, Types Of Initiating Devices, Smoke, Heat And Beam Detection Initiating Devices, Advanced Fire Alarm Detection Initiating Detection Devices, Automatic And Manual Initiating Devices, Rate Of Rise And Heat Detection, Fire Reset Switches- Factory Versus Contractor Supplied, Functional, Operational, And Reliable Life Expectancy Of All Types Of Fire Alarm Initiating Devices, Coverage Areas Of Initiating Devices, Testing And Inspection Of Fire Alarm And Life Safety Systems, Carbon Monoxide Detection Devices, UL 2034, UL 2075, Exposure Versus Functional Testing, Smoke Detector Functional Versus Sensitivity Testing, Obscuration And Dead Air Spaces, And Presentation Of Forensic Investigative Photographic Evidence From Actual Case Studies. Participants: Fire Protection Engineering Students, Arson Investigators And Students, Certified Fire Protection Specialist, Fire Protection Engineer, Law Enforcement, Lieutenant, West Haven Fire Prevention Office.
- March 2007, Instructor, Vector Security Inc., Split Rock Resort, Lake Harmony, Pennsylvania. Vector University-Central Station Spring Conference. Topics: Duties Of A Central Station, Duties Of A Central Station Operator And Supervisor, Telephone Line Issues, High-Risk High-Burglary Exposure Accounts, Types Of Telephone Line Security, Circumvention Techniques Utilized By The Criminal Element, UL Standards, NFPA Standards, Industry Standards, Dispatch Instructions, Requirements Of The Authority Having Jurisdiction (AHJ), Rules Of The State Fire Marshal, State Licensing Laws, Types Of Signals Transmitted- Burglary, Smoke And Heat, Troubles, Panic, Hold-Up And Ambush, Test Fail Conditions, Supervisory, Carbon Monoxide Detection, Gas Detection, Low Temperature, Radio Antenna Alarm, One And Two Way Radio Signaling And Polling Capabilities, Derived Channel Technology, The Subscriber Terminal Unit (STU), Water Detection, Medical Alarms, Verified Response, False Alarms, Restore Signals, Failure To Restore, Case Studies, NFPA 72® Requirements, Identifying Problematic Dispatch Instructions, And Suspicious Account Activity, Policies And Procedures, Customs And Habits. Participants: Central Station Operators, Supervisors, Managers, And Instructors, Executive Vice President Of Vector Security.

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- December 2006, Instructor, Vector Security Inc., Plymouth Meeting, Pennsylvania, Alarm Science Boot Camp. Topics: 25 Principles Of Alarm Science, Duties Of An Alarm Contractor, Case Studies, Equipment Manufacturer's Specifications, NFPA Standards And NFPA 72®, UL Standards, Nationally Recognized Industry Standards And Practices, Security And Life Safety Initiating Devices, Standards Relating To System Design, Application, Sales, Installation, Programming, Service, Maintenance And Central Station Monitoring, Four Stages Of A Fire, Fire Science, Interpretation Of NEC, And The Requirements Mandated By The Authority Having Jurisdiction, Hardwired, Wireless And Hybrid Systems, Defects And Irregularities, Telephone Line Security, Carbon Monoxide, UL 2034 And UL 2075 And Gas Detection Devices, Interior Trap Detection, Dual Technology Inherent Safeguards, End Of Line Resistor Supervision, And Feed And Return Circuits, Functional And Sensitivity Testing, Detector Calibration And Exposure Testing, The Security Survey, Audible Notification Appliance Supervision, High Risk/High Burglary Exposure Premises, Circumvention Techniques Utilized By The Criminal Element, Existing Systems, Physical Security, Crime Prevention Through Environmental Design (CPTED), Sprinkler Systems, UL Certificated Systems, Workplace Violence, Parking Lot Concerns, Trucking Issues, System Inspection, Testing And Maintenance, NICET Curriculum, Glass Breakage Detection Methodologies And Devices, CCTV Systems And Remote View, Covert And Accessible Panic And Ambush Initiating Devices, Stay Shunting And System Programming Features And Options And Non-Sale Recommendations. Participants: Local And Regional Sales, Branch And Supervisory Managers.
- December 2006, Instructor, Vector Security Inc., Wilkes-Barre, Pennsylvania, Alarm Science Boot Camp. Topics: 25 Principles Of Alarm Science, Duties Of An Alarm Contractor, Case Studies Equipment Manufacturer's Specifications, NFPA Standards And NFPA 72®, UL Standards, Nationally Recognized Industry Standards And Practices, Security And Life Safety Initiating Devices, Standards Relating To System Design, Application, Sales, Installation, Programming, Service, Maintenance And Central Station Monitoring, Four Stages Of A Fire, Fire Science, Interpretation Of NEC, And The Requirements Mandated By The Authority Having Jurisdiction, Hardwired, Wireless And Hybrid Systems, Defects And Irregularities, Telephone Line Security, Carbon Monoxide, UL 2034 And UL 2075 And Gas Detection Devices, Interior Trap Detection, Dual Technology Inherent Safeguards, End Of Line Resistor Supervision, And Feed And Return Circuits, Functional And Sensitivity Testing, Detector Calibration And Exposure Testing, The Security Survey, Audible Notification Appliance Supervision, High Risk/High Burglary Exposure Premises, Circumvention Techniques Utilized By The Criminal Element, Existing Systems, Physical Security, Crime Prevention Through Environmental Design (CPTED), Sprinkler Systems, UL Certificated Systems, Workplace Violence, Parking Lot Concerns, Trucking Issues, System Inspection, Testing And Maintenance, NICET Curriculum, Glass Breakage Detection Methodologies And Devices, CCTV Systems And Remote View, Covert And Accessible Panic And Ambush Initiating Devices, Stay Shunting And System Programming Features And Options And Non-Sale Recommendations. Participants: Local And Regional Sales, Branch And Supervisory Managers.
- December 2006, Instructor, Vector Security, Inc., Richmond, Virginia, Alarm Science Boot Camp. Topics: 25 Principles Of Alarm Science, Duties Of An Alarm Contractor, Case Studies, Equipment Manufacturer's Specifications, NFPA Standards And NFPA 72®, UL Standards, Nationally Recognized Industry Standards And Practices, Security And Life Safety Initiating Devices, Standards Relating To System Design, Application, Sales, Installation, Programming, Service, Maintenance And Central Station Monitoring, Four Stages Of A Fire, Fire Science, Interpretation Of NEC, And The Requirements Mandated By The Authority Having Jurisdiction, Hardwired, Wireless And Hybrid Systems, Defects And Irregularities, Telephone Line Security, Carbon Monoxide, UL 2034 And UL 2075 And Gas Detection Devices, Interior Trap Detection, Dual Technology Inherent Safeguards, End Of Line Resistor Supervision, And Feed And Return Circuits, Functional And Sensitivity Testing, Detector Calibration And Exposure Testing, The Security Survey, Audible Notification Appliance Supervision, High Risk/High Burglary Exposure Premises, Circumvention Techniques

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Utilized By The Criminal Element, Existing Systems, Physical Security, Crime Prevention Through Environmental Design (CPTED), Sprinkler Systems, UL Certificated Systems, Workplace Violence, Parking Lot Concerns, Trucking Issues, System Inspection, Testing And Maintenance, NICET Curriculum, Glass Breakage Detection Methodologies And Devices, CCTV Systems And Remote View, Covert And Accessible Panic And Ambush Initiating Devices, Stay Shunting And System Programming Features And Options And Non-Sale Recommendations. Participants: Local And Regional Sales, Branch And Supervisory Managers.

- December 2006, Instructor, Vector Security, Inc., Lawrenceville, New Jersey, Alarm Science Boot Camp. Topics: 25 Principles Of Alarm Science, Duties Of An Alarm Contractor, Case Studies, Equipment Manufacturer's Specifications, NFPA Standards And NFPA 72®, UL Standards, Nationally Recognized Industry Standards And Practices, Security And Life Safety Initiating Devices, Standards Relating To System Design, Application, Sales, Installation, Programming, Service, Maintenance And Central Station Monitoring, Four Stages Of A Fire, Fire Science, Interpretation Of NEC, And The Requirements Mandated By The Authority Having Jurisdiction, Hardwired, Wireless And Hybrid Systems, Defects And Irregularities, Telephone Line Security, Carbon Monoxide, UL 2034 And UL 2075 And Gas Detection Devices, Interior Trap Detection, Dual Technology Inherent Safeguards, End Of Line Resistor Supervision, And Feed And Return Circuits, Functional And Sensitivity Testing, Detector Calibration And Exposure Testing, The Security Survey, Audible Notification Appliance Supervision, High Risk/High Burglary Exposure Premises, Circumvention Techniques Utilized By The Criminal Element, Existing Systems, Physical Security, Crime Prevention Through Environmental Design (CPTED), Sprinkler Systems, UL Certificated Systems, Workplace Violence, Parking Lot Concerns, Trucking Issues, System Inspection, Testing And Maintenance, NICET Curriculum, Glass Breakage Detection Methodologies And Devices, CCTV Systems And Remote View, Covert And Accessible Panic And Ambush Initiating Devices, Stay Shunting And System Programming Features And Options And Non-Sale Recommendations. Participants: Local And Regional Sales, Branch And Supervisory Managers.
- November 2006, Instructor, Vector Security Inc., Turf Valley Resort, Ellicott City, Maryland, Vector University-Alarm Science Boot Camp. Topics: 25 Principles Of Alarm Science, Duties Of An Alarm Contractor, Case Studies, Equipment Manufacturer's Specifications, NFPA Standards And NFPA 72®, UL Standards, Nationally Recognized Industry Standards And Practices, Security And Life Safety Initiating Devices, Standards Relating To System Design, Application, Sales, Installation, Programming, Service, Maintenance And Central Station Monitoring, Four Stages Of A Fire, Fire Science, Interpretation Of NEC, And The Requirements Mandated By The Authority Having Jurisdiction, Hardwired, Wireless And Hybrid Systems, Defects And Irregularities, Telephone Line Security, Carbon Monoxide, UL 2034 And UL 2075 And Gas Detection Devices, Interior Trap Detection, Dual Technology Inherent Safeguards, End Of Line Resistor Supervision, And Feed And Return Circuits, Functional And Sensitivity Testing, Detector Calibration And Exposure Testing, The Security Survey, Audible Notification Appliance Supervision, High Risk/High Burglary Exposure Premises, Circumvention Techniques Utilized By The Criminal Element, Existing Systems, Physical Security, Crime Prevention Through Environmental Design (CPTED), Sprinkler Systems, UL Certificated Systems, Workplace Violence, Parking Lot Concerns, Trucking Issues, System Inspection, Testing And Maintenance, NICET Curriculum, Glass Breakage Detection Methodologies And Devices, CCTV Systems And Remote View, Covert And Accessible Panic And Ambush Initiating Devices, Stay Shunting And System Programming Features And Options And Non-Sale Recommendations. Participants: Local And Regional Sales, Branch And Supervisory Managers.
- November 2006, Instructor, Vector Security Inc., Boardman, Ohio, Alarm Science Boot Camp. Topics: 25 Principles Of Alarm Science, Duties Of An Alarm Contractor, Case Studies, Equipment Manufacturer's Specifications, NFPA Standards And NFPA 72®, UL Standards, Nationally Recognized Industry Standards And Practices, Security And Life Safety Initiating Devices, Standards Relating To System Design, Application, Sales, Installation, Programming, Service, Maintenance And Central Station Monitoring, Four Stages Of A

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Fire, Fire Science, Interpretation Of NEC, And The Requirements Mandated By The Authority Having Jurisdiction, Hardwired, Wireless And Hybrid Systems, Defects And Irregularities, Telephone Line Security, Carbon Monoxide, UL 2034 And UL 2075 And Gas Detection Devices, Interior Trap Detection, Dual Technology Inherent Safeguards, End Of Line Resistor Supervision, And Feed And Return Circuits, Functional And Sensitivity Testing, Detector Calibration And Exposure Testing, The Security Survey, Audible Notification Appliance Supervision, High Risk/High Burglary Exposure Premises, Circumvention Techniques Utilized By The Criminal Element, Existing Systems, Physical Security, Crime Prevention Through Environmental Design (CPTED), Sprinkler Systems, UL Certificated Systems, Workplace Violence, Parking Lot Concerns, Trucking Issues, System Inspection, Testing And Maintenance, NICET Curriculum, Glass Breakage Detection Methodologies And Devices, CCTV Systems And Remote View, Covert And Accessible Panic And Ambush Initiating Devices, Stay Shunting And System Programming Features And Options And Non-Sale Recommendations. Participants: Local And Regional Sales, Branch And Supervisory Managers.

- November 2006, Instructor, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, Metrotech Center, JP Morgan Chase, Brooklyn, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Gas Detection And Carbon Monoxide Detection Systems, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures. Participants: NYPD Police Officers, Sergeants, Lieutenants, And Crime Prevention Officers.
- November 2006, Speaker, 8th Annual NASP Educational Conference, Orlando, Florida, With Peter Parashes, Esquire Of White And Williams, LLP, Philadelphia, Pennsylvania, Subrogating Against Security And Alarm Companies: An Examination Of Technical And Legal Issues And Recovery Theories. Topics: Case Law, Gross Negligence, Negligence, Fraud, Alarm Contracts, Alarm Science, Alarm System Components, Common Defects Found In Security Systems, Chapter 489, Part II Florida Statutes, Rule 61G6 Of The Florida Administrative Code, Title 19 NYCRR Part 195, §195.4 Standards, §195.9 Supervisory Responsibility, How Alarm Systems Function, Duties Of An Alarm Contractor, Case Studies, Fire Codes, Causation, Licensing Regulations And Statutes, Recognized Standards And Practices When Performing Burglar And Fire Alarm System Investigations, Preservation Of Evidence, Internal Alarm System Event Log Data Retrieval, Central Station Database Signal History And Interpretation, Dispatch Instructions, Analysis Of NFPA 72®, National Fire Alarm Code®⁴⁷, National Fire Protection Association, Types Of Smoke And Heat Detection Initiating Devices, The Four Stages Of A Fire, Obscuration And Stratification, Equipment Manufacturers Specifications, UL Standards And The National Electrical Code, UL Certificated Systems, Hardwired, Hybrid, And Wireless Systems, Forms Of Telephone Line Security, The Telephone Line Fault Monitor, Internal System Programming And Utilizing Alarm Systems As A Silent Witness To The Event. Participants: Plaintiff And Defendant Attorneys, Insurance Adjusters, Underwriters, Special Investigators And Independent Forensic Experts.
- November 2006, Instructor, 2006 Fire Official And Fire Inspector Recertification Retreat, Middlesex County Fire Academy, Presented By New Jersey Department Of Community Affairs, Division Of Fire Safety, In Cooperation With Kean University Fire Safety Training Programs, For Fire Officials, Fire Inspectors, Fire

⁴⁷ Registered trademark of The National Fire Protection Association (NFPA).

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Instructors And Firefighters, Sayreville, New Jersey, Alarm Science Boot Camp⁴⁸, Topics: Basic Overview Of Fire Alarm System Plans And Approvals, Inspections, Identifying Defects And Irregularities In Fire Alarm System Design, Programming, Installation, And Monitoring, NFPA 72®, Paperwork And Documentation, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Testing And Inspection Requirements, Common Defects Found In Fire Alarm System Design, 25 Principles Of Alarm Science, Final Inspections, Functional And Reliable Life Expectancy Of Initiating Devices, Conventional, Addressable And Analog Addressable Systems, Application, Selection, Installation, Testing, Service, Maintenance And Monitoring, Case Studies Where Fire Alarm Systems Failed And The Reasons Why, Arson Investigations: Utilizing Alarm Systems As A Silent Witness To The Event. Participants: Fire Officials, Fire Inspectors, Fire Marshals, Fire Instructors, Electrical Contractors, Fire Sub-Code Officials, Insurance Adjusters And Training Supervisors.

- October 2006, Instructor, Vector University, Vector Security Inc., National Sales Meeting, Turf Valley Resort, Ellicott City, Maryland, Legal Liability In System Design. Topics: Alarm Science, Case Studies, Open And Obvious Risks, Options Offered, Options Declined, The Security Survey, Scientific Design Criteria For Residential, Commercial, And Industrial Applications, CCTV Systems, DVR Technologies, Smoke, Heat, Gas, And Carbon Monoxide Detection Systems, Interpretation Of NFPA 72®, National Fire Alarm Code®, Fire Protection Handbook, National Fire Protection Association, Recognized Application, Installation, And Placement Methodologies, Industry Standards, Existing Systems, Operational And Functional Life Expectancy Of Different Types Of Alarm Equipment, Perimeter And Interior Scientific Detection Criteria And Principles, System Objectives, Panic, Holdup, And Ambush Devices, System Programming, Equipment Selection, Educating Customers, Identifying Potential Sources Of Combustion, Dry And Wet Sprinkler Systems, Waterflow And Gate Valve Switches, Criminal Circumvention Techniques And Advanced Electronic Countermeasures, Free Systems And One Size Fits All Type Methodologies, Misapplication Of Technologies, And Identifying Defects And Irregularities In System Design, Sales, Recommendations, Installation, Programming, Testing, Inspection, Application, Service, Maintenance And Remote Station Monitoring. Participants: Veteran Vector Sales Professionals From All Offices Across The Country, National Accounts Sales Professionals, Vector Director Of Technical Engineering, NICET Certified Technicians, Vector Senior Management And Vector President And Its Senior Vice President.
- October 2006, Instructor, Vector University, Vector Security Inc., National Operations Meeting, Turf Valley Resort, Ellicott City, Maryland, E & O Liability Awareness Topics: Alarm Science Or Junk Science, Case Studies, Policies And Procedures, Customs And Habits, Existing And Takeover Systems, Employee Supervision, Quality Control, False Alarm Tracking, Ways To Help Minimize Liability, Training, Design, Application, Installation, And Monitoring Criteria And Principles, Duties Of An Alarm Contractor, High-Risk High-Burglary And Robbery Exposure Premises, The Security Survey, NFPA Acceptance And Re-Acceptance Testing, Functional And Sensitivity Testing, Integrated Systems, Conventional And Analog Addressable Fire Alarm And Life Safety Systems, Burglar Alarm And Detection Methodologies, Power Supply And Standby Requirements, Testing And Inspection, Defects And Irregularities, End Of Line Resistor Supervision, Two Wire Smoke Detector Compatibility, Power Supervision, Equipment Manufacturers Specifications, UL Standards, NFPA Standards And Nationally Recognized Industry Standards And Practices, The Authority

⁴⁸ Excerpt from Director's message, Lawrence Petrillo, State Fire Marshal, Director, New Jersey Division of Fire Safety, "As members of the Fire Service in today's world, it is imperative that we are as prepared as possible for every possibility. Our fall training and certification programs are designed to prepare you for the possibilities and potential situations that exist every day in the world of first responder. We are committed to meeting the training and educational needs of our diverse Fire Service Community. The Fire Service is offering two courses prior to the N.J. Firemen's Convention in Wildwood and we have a diverse line-up planned for the FIFO Conference, which you can see on Page 4. Courses like Fire Alarm Science Boot Camp, Demystifying Expert Testimony in a Fire Case, Conflict Prevention and Resolution and Terrorism Awareness for Fire Inspectors and Code Officials will provide you with a working understanding of each subject."

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Having Jurisdiction, Fire Code Interpretation, NFPA 72®, National Fire Alarm Code®, Fire Protection Handbook, National Fire Protection Association, One And Two Way Telephone Line Security Methodologies, UL Certificated Systems, Water, Low Temperature And Environmental Detection Devices, Medical Alarm Systems, ECP, VOIP, Telephone Line Seizure, System Options, Open And Obvious Risks, (CPTED), Crime Prevention Through Environmental Design, System Maintenance, Supervised Openings And Closings And Scientific Methodologies When Performing Alarm System Design And Installation. Participants: Operation Managers From Each Vector Location Across The Country, Senior Management, Senior Vice President And Vector President.

- June 2006, Instructor, Vector Security, Inc. Leaders Conference, Ace Conference Center, Lafayette Hill, Pennsylvania. E & O Liability Awareness, Topics: Alarm Science Or Junk Science, Duties Of An Alarm Contractor, Temperature Sensors, Digital And Radio Test Fail Conditions, Residential And Commercial Fire Alarm Accounts, Slave Digital Communicators, UL Listed Remote Station Operator Instructions, Medical Alarm Systems, High-Risk High Burglary Exposure Premises, The Security Survey, End Of Line Resistor Supervision, The 25 Principles Of Alarm Science, Functional Vs. Sensitivity Testing, Existing And Takeover Systems, Carbon Monoxide And Gas Detection Systems, Panic, Holdup, And Ambush Systems, Case Studies, And Advanced Circumvention Techniques Utilized By The Criminal Element. Participants: President Of Vector Security, Executive Vice President, Senior Vice Presidents, Senior Management, Technical Vice President, False Alarm Coordinator, And Branch Managers From All Offices Across The Country.
- June 2006, Instructor, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, Metrotech Center, JP Morgan Chase, Brooklyn, New York. Topics: Alarm Science, Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Safe And Vault Protection, Circumvention Techniques Utilized By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures. Participants: Training Specialist Of New Jersey Office Of Homeland Security, Sergeant Columbia University Department Of Public Safety, New York Office Of Emergency Management, Lieutenant Metro Tech Security, New York City Police Department Officers, And Sergeants From The 1, 13, 19, 24, 28, 32, 33, 34, 41, 42, 47, 60, 70, 72, 78, 81 And 111 Precincts. New York City Police Department Crime Prevention Officers, And Sergeant, Lieutenant Community Affairs Bureau, Detective And Police Officers New Rochelle Police Department, 1 Police Plaza Security, Captain Of The Organized Crime Control Bureau, Patrol Borough Bronx Police Officers, Housing Division Police Officers, Training Coordinators From The Office Of Emergency Management, Transit District Police Officers And Patrol Borough Manhattan North Police Officers.
- April 2006, Executive Guest Lecturer, New York Institute Of Technology (NYIT), Department Of Behavioral Science, Private Security, Forensic Case Studies Of Alarm Liability, Old Westbury, New York. Topics: Alarm, Fire And Security Science, Case Studies, Duties Of An Alarm Contractor, Equipment Manufacturer's Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Identifying Defects And Irregularities In System Design, Application, Installation, Programming, Service, Maintenance And Monitoring, Telephone Line Security Methodologies, The Security Survey, Crime Prevention Through Environmental Design, Circumvention Techniques Utilized By The Criminal Element In

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Advanced Electronic Countermeasures To Counter This Threat, UL Certificated Systems And UL Listed Central Station Monitoring Performance Based Standards, Risk, Threat And Vulnerability Assessment, Workplace Violence, Licensing Standards And Standards Of Care, NFPA 72® And The Authority Having Jurisdiction, Active And Passive Infrared Beam Technology, Single And Dual Technology, Inherent Safeguards, Safe And Vault Protection, Electronic And Physical Security, Protection Strategies, And Covert And Overt CCTV Systems. Participants: Undergraduate And Graduate Students And Professor Edward Maggeo, J.D.

- December 2005, Instructor, New York City Police Department (NYPD), Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, Metrotech Center, JP Morgan Chase, Brooklyn, New York. Topics: Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Safe And Vault Protection, Circumvention Techniques By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, And Central Station Policies And Procedures. Participants: NYPD Lieutenants, Sergeants, Detectives, Police Officers, Crime Prevention Officers And Security Directors.
- November 2005, Guest Speaker, Certificate Of Appreciation, Recognized By The New Jersey Chapter Of The Automatic Fire Alarm Association, AFAA-NJ General Membership Meeting By Participating With Our Association To Improve Fire And Life Safety In America And By Striving To Ensure Fire Protective Signaling And Automatic Detection Systems Are Properly Designed, Installed And Maintained. Case Studies In Alarm Liability And New Jersey's Laws On Alarm Contracting. Topics: Fire Science And Recognized Methodology, New Jersey Fire Alarm Contractor Licensing Rules And Regulations, Equipment Manufacturer Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, NFPA 72®, Code Interpretation, Acceptance And Reacceptance Testing, Functional And Sensitivity Testing On Smoke Detectors, System Documentation, Case Studies, Common Defects And Irregularities In The Design, Application, Installation, Programming, Service, Maintenance, And Monitoring Of Residential And Commercial Fire Alarm And Life Safety Systems, Fire Code Violations, And Duties Of A Fire Alarm Contractor. Participants: AFAA Members, Representatives Of New Jersey's Alarm Licensing Board, NICET Certified Technicians And Fire Alarm Company Managers, Service Technicians And Owners.
- October 2005, Presenter, Rotary International, Alarm Science, *What You Need To Know...*
- August 2005, Instructor, Wayne Alarm Systems, Inc. Lynn, Massachusetts. Alarm Science: Topics: Case Studies, Sales, Installation, And Central Station Monitoring Policies And Procedures, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, The National Electrical Code, Nationally Recognized Industry Standards And Practices, Fire Science, Smoke And Heat Detection Systems, Carbon Monoxide And Gas Detectors, The Security Survey, Design, Installation, Application, Programming, Testing, Service, Maintenance And Central Station Monitoring, Ambush And Panic Systems, Inherent Safeguards, Service Calls, Stay Shunting, Machine Wired Screens, Automated And Supervised Signaling And Testing, Polling Requirements, UL Certificated Systems, Telephone Line Security, High-Risk High Burglary Exposure Premises And Systems, Circumvention Techniques, Existing Systems, Takeovers, Upgrades, Technical And Operational Analysis Of Alarm Equipment And Functionality, Low And High Temperature Detection Systems, Water Detection Systems, Medical Alarm Systems And Nurse Call, CCTV And Access Control Systems, Physical Security And CPTED, NFPA Acceptance And Reacceptance Testing, Functional And Sensitivity Testing, VOIP And DSL, RJ 31X Jack And Telephone Line Seizure, NFPA 72®,

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Code Requirements And Interpretation, And Alarm System Defects And Irregularities. Participants: Approximately 80 Employees From All Divisions Of Company, Field Technicians, Central Station Dispatchers, Supervisors, Sales, Consultants And Office Personnel, President Of Wayne Alarms, Corporate Counsel, Subcontract Alarm Dealers: Secure Security Systems, Inc. Ultraguard BNT Security.

- August 2005, Instructor, 41st Southeastern Arson Seminar, Fire Investigations: Bridging The Gap In The 21st Century, Savannah, Georgia. Hosted By The Georgia Insurance And Safety Fire Commissioner, John W. Oxendine, Commissioner Of Insurance, Safety Fire Commissioner And The Georgia Fire Investigators Association, The Georgia Chapter Of IAAI⁴⁹, Alarms: Topics: Fire Science, Obscuration, Stratification, Case Studies, Duties Of An Alarm Contractor, Equipment Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, The National Electrical Code, The Four Stages Of Fire, Early Warning Detection, Types Of Fire Alarm Initiating Devices, Types Of Systems, Alarm Defects And Irregularities, System Programming, Testing, Repair, And Maintenance, Design, Installation, Application, Service, Monitoring, End Of Line Resistor Supervision, Power Supervision, Secondary Forms Of Central And Remote Station Communications, Special Considerations, Proper Methodology For Collection Of Evidence In Fire Investigations, Two Wire Smoke Detector Compatibility And Fraud Analysis In Fire Investigations. Participants: Local And State Fire Marshals, Fire Chiefs, Fire Protection Engineers, Electrical Engineers, Cause And Origin Investigators, Fire Inspectors, Fire Investigators, Various Police And Fire Departments, Private Investigators, Attorneys, Adjustors, And Insurance Agencies, Captain Of Fire Prevention, Henry County Fire Department, Lieutenant Fire Investigator, Augusta Georgia Bureau Of Fire Prevention, And Captain Martinez Fire Department.
- July 2005, Instructor, National Fire Protection Association (NFPA), America's Fire Expo (AFE)⁵⁰, Florida. The Fire Alarm Technical Community: Acceptable And Unacceptable Practices In The Design, Application, Installation, Sales, Service, And Monitoring Of Residential And Commercial Fire Alarm Systems. Topics: Manufacturers Specifications, NFPA Standards, UL Standards, Nationally Recognized Industry Standards And Practices, Testing, Compliance With It's Representations And Specifications, Case Studies, Duties Of An Alarm Contractor, End Of Line Resistor Locations, Power Supervision Relay, Two-Wire Smoke Detector Compatibility, Programming, Design And Installation, Maintenance, Grounding, Control And Initiating Device Application, Telephone Line Security, Automated Testing On Residential And Commercial Fire Alarm Systems, Training And Supervision, Full System Testing And Documentation, User Training, Chapter 489, Part II Florida Statutes, Rule 61G6 Florida Administrative Code And Article 6D Of The General Business Law. Participants: Fire Inspectors, Fire Marshals, Fire Officials, Fire Protection Engineers, Alarm Technicians And Alarm Contractors.

⁴⁹ The International Association of Arson Investigators (IAAI), is a worldwide organization of fire investigators, fire service/law enforcement professionals and other related disciplines dedicated to the promotion of professional standards in fire investigation, fire safety, public education and awareness of fire-related issues, and the suppression of arson.

⁵⁰ Subject: Thank you from NFPA. "To all who dedicated their time and research to the development of fire and safety professionals across the Americas! Thank you for participating as a presenter at the NFPA 2005 America's Fire Expo. This year's education program was very well received. It was successful because experts like you offer our attendees valuable training opportunities. We know how much time and work is involved in developing presentations and we do appreciate your efforts. Thank you again for your support of NFPA. Sincerely, Olga C. Caledonia, Director, Global Operations." Subject: Thank you from ESTI/TEEX, Texas A&M University System. "On behalf of ESTI, TEEX, and the Texas A&M University System, we welcome the opportunity to support the NFPA and the Americas Fire & Security Expo. Mr. Anthony Garcia and Mr. Rosendo Garcia spoke very highly of the recent conference. I know they look forward to again working with the NFPA staff and supporting the 2006 conference. Best Regards, Mike Wisby, Program Manager." The Texas Engineering Extension Service develops a skilled and trained workforce that enhances public safety, security and economic growth of Texas and the nation through training, technical assistance and technology transfer. A MEMBER OF THE TEXAS A&M UNIVERSITY SYSTEM.

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- June 2005, Instructor, Florida Insurance Fraud Education Committee (FIFEC), Division Of Insurance Fraud (DIF) And Special Investigations Unit (SIU) 2005 Joint FIFEC Conference, Orlando, Florida. Case Studies- Defects And Irregularities In Residential And Commercial Fire Alarm Systems. Topics: Specialized Techniques And Analysis Of Security Systems In Fraud And Special Investigations And Utilization Of This Data In Civil And Criminal Cases For Plaintiffs And Defendants. Manufacturers Specifications, UL Standards, NFPA Standards, Installation Methodologies, Nationally Recognized Industry Standards And Practices And The Fire Code. Case Studies, Testing And Inspecting Protocols, Duties Of An Alarm Contractor, Chapter 489, Part II, Florida Statutes, Rule 61G6 Of The Florida Administrative Code, Defects Found In Residential And Commercial Security And Fire Alarm Systems, End Of Line Resistor Locations, Power Supervision Relays, Two Wire Smoke Detector Compatibility And Incompatibility, Failure To Properly Program, Design, Install, Test And Maintain Security And Fire Alarm Systems. Participants: Plaintiff And Defendant Attorneys, Private Investigators, Cause And Origin Investigators, Special Investigation Unit Investigators, Certified Fraud Examiners, Florida Department Of Financial Services, State Of Florida Law Enforcement Investigator II, Fraud Division, State Of Florida Criminal Investigator Fraud Division, Insurance Adjusters, Claims Professionals And Consultants.
- May 2005, Instructor, 2005 North American Security Symposium & Exposition (NASS EX), Montreal, Canada. Organized By The Central Station Alarm Association.⁵¹ Technical Training: Forensic Case Studies Of Alarm Liability⁵², Topics: Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, Physical Security, Foreseeability And Preventability, Duties Of An Alarm Contractor, Design, Application, Installation, Programming, Service, Maintenance, Testing And Central Station Defects And Irregularities, UL Certificated Systems, Safe And Vault, Partial And Complete Systems, System Programming, Telephone Line Security, Enhanced Methodologies In The Application Of Telephone Line Security Applications, High-Risk High-Burglary Exposure Premises, Panic And Holdup Systems, Sensitivity And Functional Testing Of Smoke Detectors, Heat Detectors, Proper Application Of Fire Alarm Initiating Devices, The Four Stages Of Fire, Obscuration, Stratification And Fire Alarm Science, The 25 Principles Of Alarm Science, Records Retention Policies And Procedures, Acceptance And Reacceptance Testing, Central Station Operations, Training And Supervision Of Technicians And Central Station Operators, Alarm And Central Station Policies, Procedures And Protocols, Standards Of Care, Dispatch Policies, Procedures And Protocols, Performing Alarm And Central Station Services Without The Knowledge, Consent, Or Authority Of The Subscriber, Testing, Alarm System Design And Surveys, Service And Maintenance Requirements, NYC Fire Requirements, Article 6D Of The General Business Law For Alarm Contractors In New York State, Title 19 NYCRR Security And Fire Alarm Systems Part 195 Licensing Regulations For The Business Of Installing, Servicing Or Maintaining Security Or Fire Alarm Systems, Chapter 489, Part II, Florida

⁵¹ The Central Station Alarm Association (/) is a national nonprofit trade organization for individuals or companies whose primary business is the operation of central station facilities. It's purpose, from it founding in 1950 to present, has been to foster and improve relationships among providers and users of UL Listed and FMRC Approved central station protective services, and with agencies that have jurisdiction over, or regulate such services. The NASSEX 2005 is sponsored by ADI, Alert Alarm of Hawaii, Bosch Security Systems, Digital Security Controls (DSC), GE Monitoring Automation Systems (MAS), GE Security, Honeywell Access Systems, LaSalle Bank and System Sensor. The NASSEX 2005 is endorsed by the Alabama Alarm Association (AAA); Alarm Association of Florida (AAF); California Alarm Association (CAA), Illinois Electronic Security Association (IESA); Louisiana Burglar & Fire Alarm Association (LBFAA); Massachusetts Systems Contractors Association (MSCA); Mississippi Alarm Association Inc. (MAA); New Hampshire Burglar & Fire Alarm Association (NHBFAA); New Jersey Burglar & Fire Alarm Association (NJBFAA); New York Burglar & Fire Alarm Association (NYBFAA); Pennsylvania Burglar and Fire Alarm Association (PBFAA); SDM Magazine; Security Dealer Magazine; Security System News; Security Sales and Integration; SP & T News; Tennessee Burglar & Fire Alarm Association (TBFAA); and the Wisconsin Burglar & Fire Alarm Association (WBFAA).

⁵² Forensic Case Studies Of Alarm Liability is approved for continuing education by the National Training School of The National Burglar and Fire Alarm Association, .4 CEUs, NTS 04-1308.

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Statutes, And Rule 61 G6 Of The Florida Administrative Code For Alarm Contractors In The State Of Florida, Qualifiers Responsibilities And Duties, PERS Systems And Equipment And Standards, And Case Studies. Participants: UL Listed Central Station Alarm Companies, Nationally And Regionally Recognized UL Listed Alarm Companies, Alarm Contractors, Senior Level Technical Management, Installation And Central Station Management From Alarm And Central Station Companies From Across The Country And Canada, Equipment Manufacturers Product And Technical Representatives, Attorneys Representing The Alarm Industry, Certified Protection Professionals And NICET Certified Technicians. NTS 04-1308.

- May 2005, Presenter, NASP, Buffalo, New York, Alarm Failures. Topics: Intrusion Detection Systems, Fire And Life Safety Systems, State Of New York Department Of State, Article 6D Of The General Business Law As It Relates To The Business Of Installing, Servicing, Or Maintaining Security Or Fire Alarm Systems, Accepted And Non-Accepted Practices By The Technical Community Of The Alarm Industry, Defects And Irregularities In Alarm System Design And Installation, 25 Principles Of Alarm Science, Fire Code Requirements And The Authority Having Jurisdiction. Participants: Insurance Company Adjusters, Attorneys, Special Investigators And Cause And Origin Investigators.
- April 2005, Instructor, Property Loss Research Bureau (PLRB), Claims Conference 2005, San Antonio, Texas. Alarm University. Topics: Alarm Fundamentals, Alarm Science, Alarm Methodologies And Principles, Basic Alarm Electronics, Alarm System Recommendations, Design, Application, Installation Service, Maintenance And Central Station Monitoring, Testing And Inspection, UL Certificated Systems, Equipment Manufacturer's Specifications, UL Standards, Nationally Recognized Industry Standards And Practices, Defects And Irregularities, Policies And Procedures, Protective Safeguard Endorsements, Lightning Damage Claims, Investigation Fundamentals, Preservation Of Evidence, Case Studies And Fraud Detection. Participants: Plaintiff And Defendant Attorneys And Claims Professionals. Continuing Education Credits Approval By: The Florida Department Of Insurance, North Carolina Department Of Insurance, The Florida Bar And The State Bar Of Texas.
- February, 2005, Instructor, Regional Alarm Association (RAA), Elmsford, New York-Case Studies Of Alarm Liability. Topics; Manufacturer's Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, End Of Line Resistor Supervision, Power Supervision Relays, Functional And Sensitivity Smoke Detector Testing, NFPA Acceptance And Reacceptance Testing, System Programming, Panic And Ambush, Smoke Detector Life Expectancy, System Defects And Irregularities, RPM Technology, System Testing And Training. Participants: Certified And Licensed New York State Alarm Contractors, NICET Certified Technicians And Alarm Technicians.
- December 2004, Instructor, New York City Police Department, Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, Metrotech Center, JP Morgan Chase, Brooklyn, New York. Topics: Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Safe And Vault Protection, Circumvention Techniques By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, Covert And Overt CCTV Systems And Digital Video Technologies And Central Station Policies And Procedures. Authored And Administered Written Examination. Participants: NYPD Lieutenants, Sergeants, Detectives, Police Officers, Inspectors, Port

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Authority Of New York And New Jersey Police Officers, New Jersey State Police Detective, Sergeants And Troopers, Nassau County Police Department, Mount Vernon Police Department, US Marshals Inspector, JP Morgan Chase Security Supervisors, Price Waterhouse Security Manager And ARUP Engineering.

- July 2004, Instructor, 2004 NFPA Americas' Fire Expo (AFE), Miami Beach, Florida, Forensic Case Studies Of Alarm Liability, National Fire Protection Association. Topics: Twenty Five Principles Of Alarm Science, Case Studies, Duties Of An Alarm Contractor, Manufacturer's Specifications, NFPA Standards, UL Standards, Nationally Recognized Industry Standards And Practices, Training And Supervision, The Authority Having Jurisdiction (AHJ), Fire Code Interpretation, Existing Fire Alarm Systems And Initiating Devices, Testing And Inspection, Functional Versus Sensitivity Testing, Accepted Practices By The Technical Community Of The Fire Alarm Industry, Minimizing Loss When Performing Fire Alarm System Design And Installation, Defects Found In Residential And Commercial Fire Alarm Systems, Identifying High Risk Fire Alarm System Design And Installation, Identifying Risk In Fire Alarm System Testing And Inspection, Mission Critical: Proper Testing And Inspection Of Fire Alarm Systems. Participants: Fire Inspectors, Fire Marshals, Fire Officials, Fire Protection Engineers, Alarm Technicians, Alarm Contractors And Insurance Loss Control And Risk Managers.
- June 2004, Presenter, SEAK, Inc. Seminar, Sheraton Hotel, Hyannis Cape Cod, Massachusetts.
- June 2004, Instructor, Florida Insurance Fraud Education Committee (FIFEC), Division Of Insurance Fraud (DIF) And Special Investigations Unit (SIU) 2004 Joint FIFEC Conference, Orlando, Florida. Silent Witness: Utilizing Security Systems In Fraud Investigations. Topics: Specialized Techniques And Analysis Of Security Systems In Fraud And Special Investigations And Utilization Of This Data In Civil And Criminal Cases For Plaintiffs And Defendants. Manufacturers Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices And The Fire Code. Case Studies, Testing And Inspecting Protocols, Duties Of An Alarm Contractor, Chapter 489, Part II, Florida Statutes, Rule 61G6 Of The Florida Administrative Code, Defects Found In Residential And Commercial Security And Fire Alarm Systems, End Of Line Resistor Locations, Power Supervision Relays, Two Wire Smoke Detector Compatibility And Incompatibility, Failure To Properly Program, Design, Install, Test And Maintain Security And Fire Alarm Systems. Participants: Detectives, Police Investigators, Detectives State Fire Marshal's Office, Plaintiff And Defendant Attorneys, Private Investigators, Cause And Origin Investigators, Special Investigators, Florida Department Of Financial Services, Fraud Division Investigators, Insurance Adjusters, Claims Professionals And Consultants.
- June 2004, Instructor, New York City Police Department, Crime Prevention Section, Office Of The Chief Of Department, Basic Methods Of Security Course, Metrotech Center, JP Morgan Chase, Brooklyn, New York. Topics: Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Fire Alarm Science, Functional And Sensitivity Smoke Detector Testing, Safe And Vault Protection, Circumvention Techniques By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, Covert And Overt CCTV Systems And Digital Video Technologies And Central Station Policies And Procedures. Authored And Administered Written Examination. Participants: NYPD Sergeants, Lieutenants, Detectives, Internal Affairs Officers, Patrol Officers, School Safety Officers, Port Authority Police, FDNY Fire Marshals And JP Morgan Chase Security Director.

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- April 2004, Executive Guest Lecturer⁵³, Eastern Kentucky University, Department Of Loss Prevention And Safety, College Of Justice And Safety, Richmond, Kentucky. Courses Taught: Fire Safety Supervision And Fire Law, Principles Of Assets Protection, Assets Protection Law, Retail Security And Homeland Security. Topics: Fire Science, Fire Alarm System Design, Application, Installation, Service, Maintenance And Remote Station Monitoring, System Programming, Training And Supervision, Code Interpretation, NFPA Standards, NFPA Acceptance And Re-Acceptance Testing, Functional And Sensitivity Testing, System Documentation, Equipment Manufacturers Specifications, UL Standards, Nationally Recognized Industry Standards And Practices, Case Studies, Arson And Fire Scene Investigation And Methodology, Evidence Preservation, Alarm System Failures, Identification Of Defects And Irregularities On Fire Alarm, Life Safety And Suppression Systems, Authorities Having Jurisdiction, Fire Department Response Requirements, Statistical Data And Accepted And Non-Accepted Practices Of The Technical Community Of The Fire Alarm Industry, Security Management, Physical Security, Crime Prevention Through Environmental Design (CPTED), Premises Security Liability, Security Awareness, Security Policies And Procedures, Security Techniques And Strategies To Minimize And Identify Risk, Foreseeability Studies, Crime Demographic Studies, Target Hardening, Security System Design, Application, Installation, Service, Maintenance And Remote Station Monitoring, UL Standards, UL Certificated Systems, High-Risk, High-Burglary And Robbery Exposure Premises, Hardwired And Wireless Panic And Ambush Systems, System Programming, Training And Supervision, Case Studies, Electronic Counter Measures To Highly Skilled Burglary Attacks, Safe And Vault Protection, Primary And Secondary Communication Signal Technologies, End Of Line Resistor Supervision, Double Circuitry, Positive And Negative In And Out Circuitry, Feed And Return Protective Loops, Remote And Central Station Standards And Practices, Identification Of Defects And Irregularities On Security Systems In Residential, Commercial And Industrial Applications, Police Department Response To Alarm Signals, Infrastructure Security And Accepted And Non-Accepted Practices Of The Technical Community Of The Burglar Alarm Industry.
- March, 2004, Instructor, Property Loss Research Bureau (PLRB), Decisions 2004 Claims Conference, Chicago, Illinois. Fraud, Subrogation & Lightning Claims-Advanced Investigations: Focus On Alarm Systems. Topics: Defects And Irregularities In Security System Design, Case Studies, Manufacturer's Specifications, UL Standards, NFPA Standards, And Nationally Recognized Industry Standards And Other Practices In The Alarm Industry. Recognized Practices And Acceptance Of Alarm System Design, Application, Programming, Installation, Testing, Service, Maintenance And Central Station Monitoring By The Technical Community Of The Alarm And Security Industry. Proper And Improper End Of Line Resistor Protective Circuit Supervision Configuration, Feed And Return Circuits And Their Proper Application In Residential, Commercial And Industrial Applications. Common Defects Found In Burglar And Fire Alarm Systems And Their Effect On Alarm System Performance. Defects And Irregularities In Burglar And Fire Alarm Systems Which Are

⁵³ Subject: Norman M. Spain, J.D., CPP, Professor & Program Coordinator, Assets Protection and Security, Eastern Kentucky University, College of Justice and Safety Department of Loss Prevention and Safety. "This open correspondence is to serve as a warm letter of appreciation for alarm system consultant Jeffrey Zwirn, CPP, who was an invited Executive Guest Lecturer at our University in April of 2004. Jeffrey made three separate presentations on fire and security alarm systems to undergraduate students enrolled in assets protection and security, and fire safety engineering technology programs. In these presentations, he provided an overview of security and fire alarm systems; discussed alarm system liability issues; and examined terrorism and homeland security with an emphasis on alternative uses of alarm system technology. Each presentation was exceptional. Jeffrey was well organized, his slides were highly illustrative, and his enthusiasm was boundless. He tailored each presentation to the appropriate audience and engaged the students by talking about real issues and cases, and by showing slides and asking questions that encouraged them to think as professionals. For example, not only did he discuss appropriate uses of fire and burglar alarm hardware and related physical security equipment, he discussed inappropriate uses of this equipment, and showed slides of installed equipment that was improperly used and/or maintained. As part of these discussions, he provided invaluable insight on and demonstrated the need for proper alarm system policies and procedures, and employee training. We felt very fortunate that he was able to visit our University and to share his professional knowledge and experiences with our students."

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Concealed From The Subscriber. Proper Investigative Techniques For Burglar And Fire Alarm Systems. Participants: Plaintiff And Defendant Attorneys From The Insurance Industry And In Private Practice And Claims Professionals. Course Acceptance: Continuing Education Units And Or Professional Development Approved By The New Hampshire Department Of Insurance.

- January, 2004, Presenter, NASP, Melville, New York, Advanced Alarm System Investigations. Topics: Intrusion Detection Systems, Fire And Life Safety Systems, State Of New York Department Of State, Article 6D Of The General Business Law As It Relates To The Business Of Installing, Servicing, Or Maintaining Security Or Fire Alarm Systems, Accepted And Non-Accepted Practices By The Technical Community Of The Alarm Industry, Defects And Irregularities In Alarm System Design And Installation, 25 Principles Of Alarm Science, Fire Code Requirements And The Authority Having Jurisdiction. Participants: Insurance Company Adjusters, Attorneys, Special Investigators And Cause And Origin Investigators.
- December, 2003, Instructor, Joint Terrorism Task Force, Counter Terrorism Bureau, Metrotech Center, JP Morgan Chase, Brooklyn, New York. Topics: Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Functional And Sensitivity Smoke Detector Testing, Safe And Vault Protection, Circumvention Techniques By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, Covert And Overt CCTV Systems And Digital Video Technologies And Central Station Policies And Procedures. Authored And Administered Written Examination. Participants: New York City Police Department Intelligence Division, Patrol Commanders, Commanders, Administrative Services, Captain, Sergeants, Detectives, Lieutenants, Police Officers, Crime Prevention Unit, Amtrak Police Department, Ithaca Police Department, City Of New York Fire Department, City Of New York Fire Marshals, South Carolina Port Authority, Hempstead Police Department, Rockefeller Center Security, Knight Security And Apollo Security.
- November 2003, Chair And Instructor, Warehouse Arson Losses: Multi-Million Dollar Claims, PLRB/LIRB Large Loss Conference, Atlanta, Georgia.
- November, 2003, Instructor, National Fire Protection Association (NFPA) Fall Education Conference 2003,⁵⁴ Reno, Nevada, Forensic Case Studies Of Alarm Liability. Topics: Twenty Five Principles Of Alarm Science, Case Studies, Duties Of An Alarm Contractor, Manufacturer's Specifications, NFPA Standards, UL Standards, Nationally Recognized Industry Standards And Practices, Training And Supervision, The Authority Having Jurisdiction (AHJ), Fire Code Interpretation, Existing Fire Alarm Systems And Initiating Devices, Testing And Inspection, Functional Versus Sensitivity Testing, Accepted Practices By The Technical Community Of The Fire Alarm Industry, Minimizing Loss When Performing Fire Alarm System Design And Installation, Defects Found In Residential And Commercial Fire Alarm Systems, Identifying High Risk Fire Alarm System Design And Installation, Identifying Risk In Fire Alarm System Testing And Inspection, Mission Critical: Proper Testing And Inspection Of Fire Alarm Systems. Participants: Fire Alarm And Life Safety System Designers

⁵⁴ "The Fall Education Conference, once again proved to be an amazing opportunity to learn from renowned experts, network with Colleagues from around the world, and take home knowledge that can be readily implemented in the workplace. More than 800 professionals from a wide cross-section of disciplines gathered in Reno for the 2003 NFPA Fall Education Conference. What they experienced can only be described as astounding!" - NFPA Journal January/February 2004

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And Installers, Consultants, Building Officials, Fire Inspectors, Plans Examiners, Battalion Chief, Fire Chief, Professional Engineers, Fire Prevention Specialists And Loss Control Directors.

- October 2003, Participant, Fire Alarm Training, Pennsylvania Burglar And Fire Alarm Association, Morgantown, Pennsylvania.
- October 2003, Instructor, Advanced Alarm Investigations, Travelers Insurance Company Corporate Training Center, Hartford, Connecticut.
- June 2003, Instructor, New York City Police Department (NYPD), Office Of The Chief Of Department, Basic Methods Of Security Course, Queens College, City College, New York. Topics: Intrusion Detection Systems, Manufacturers Specifications, UL Standards, UL Certificated Systems, NFPA Standards And Nationally Recognized Industry Standards And Practices, Functional And Sensitivity Smoke Detector Testing, Safe And Vault Protection, Circumvention Techniques By The Criminal Element, Land Line And Radio Based Telephone Line Security Technologies, Redundant Systems, System Programming And Safeguards, End Of Line Resistor And Double Circuitry, Protective Loop Circuit Supervision, Installation Methodologies, Security System Design, Survey And Recommendations, Defects And Irregularities In Security System Design, Application, Installation, Testing, Programming, Service, Maintenance And Central Station Monitoring, Security System Design Criteria For High Risk, High Burglary Exposure Premises, Bank Security, Case Studies, Physical Security, Crime Prevention Through Environmental Design (CPTED), Accepted And Non-Accepted Installation Methodologies For Security And Life Safety Systems, Advanced Techniques For Security System Design, Covert And Overt CCTV Systems And Digital Video Technologies And Central Station Policies And Procedures. Authored And Administered Written Examination. Participants: Joint Terrorism Task Force, State Department, FBI, Counter Terrorism Bureau, New York City Police Department Detectives, New York City Police Department Crime Prevention Officers, Empire State Building Security Director, Austrian Museum Security Director, Cultural Institution Security Directors And Out Of State Law Enforcement.
- June 2003, Instructor, Regional Alarm Association (RAA), Elmsford, New York-Case Studies Of Alarm Liability. Topics: Manufacturer's Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices, End Of Line Resistor Supervision, Power Supervision Relays, Functional And Sensitivity Smoke Detector Testing, NFPA Acceptance And Reacceptance Testing, System Programming, Panic And Ambush, Smoke Detector Life Expectancy, System Defects And Irregularities, Grounding, System Testing And Training. Participants: Certified And Licensed New York State Alarm Contractors, NICET Certified Technicians, Certified Protection Professionals, Alarm Technicians And The President Of The New York Burglar And Fire Alarm Association.
- March-April 2003, Instructor, Property Loss Research Bureau (PLRB), Claims Conference 2003, Orlando, Florida. Fraud, Subrogation & Lightning Claims-Advanced Investigations: Focus On Alarm Systems. Topics: Defects And Irregularities In Security System Design, Case Studies, Manufacturer's Specifications, UL Standards, NFPA Standards, And Nationally Recognized Industry Standards And Other Practices In The Alarm Industry. Recognized Practices And Acceptance Of Alarm System Design, Application, Programming, Installation, Testing, Service, Maintenance And Central Station Monitoring By The Technical Community Of The Alarm And Security Industry. Proper And Improper End Of Line Resistor Protective Circuit Supervision Configuration, Feed And Return Circuits And Their Proper Application In Residential, Commercial And Industrial Applications. Common Defects Found In Burglar And Fire Alarm Systems And Their Effect On Alarm System Performance. Defects And Irregularities In Burglar And Fire Alarm Systems Which Are Concealed From The Subscriber. Proper Investigative Techniques For Burglar And Fire Alarm Systems. Participants: Plaintiff And Defendant Attorneys From The Insurance Industry And In Private Practice And Claims Professionals. Course Acceptance: Continuing Education Units And Or Professional Development Approved By The Florida Bar, Chartered Property Casualty Underwriters (CPCU), State Of Delaware

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Insurance Commissioner, New Hampshire Insurance Department, North Carolina Insurance Department, Texas Department Of Insurance And The Society Of Registered Professional Adjusters.

- November, 2002, Instructor, New York City Police Department (NYPD), Office Of The Chief Of Department, Basic Methods Of Security Course, Queens College, City University Of New York, Topics: Intrusion Detection Systems, Life Safety Systems, Crime Prevention Through Environmental Design (CPTED), Physical Security, Security Survey And Analysis, Workplace Violence, Electronic House Arrest Systems, Case Studies, Defects And Irregularities In Alarm System Design, Installation And Central Station Monitoring, Manufacturers Specifications, UL Standards, UL Certificated Systems. Performance Based Standards, NFPA Standards And Nationally Recognized Industry Standards And Practices, Jewelry Store Security, Safe And Vault Protection And Bank Security. Participants: Joint Terrorism Task Force, Counter Terrorism Bureau, New York City Police Department Detectives, Queens College Security, Deputy Commissioner Community Affairs, Department Of Investigations, Internal Affairs, Bronx District Attorney's Office, Manhattan District Attorney's Office, Chief Of Departments Office, NYPD Major Case Squad, Veterans Administration, Health And Hospital Police, Columbia University, NYPD Crime Prevention Officers, Drug Enforcement Administration (DEA).
- November, 2002, Instructor, Prudential Insurance, Fairfield, New Jersey, Alarm System Seminar, Lightning, Fraud And Subrogation Analysis And Investigations.
- May, 2002 Guest Speaker, Certificate Of Appreciation, Recognized By The New Jersey Chapter Of The Automatic Fire Alarm Association, AFAA-NJ General Membership Meeting By Participating With This Organization To Improve FIRE AND LIFE SAFETY IN AMERICA And By Striving To Ensure Fire Protective Signaling And Automatic Detection Systems Are Properly Designed, Installed And Maintained. Case Studies In Alarm Liability. Topics: Accepted And Non-Accepted Procedures In The Fire Alarm Technical Community When Performing Fire Alarm System Design, Sales, Installation, Service, Maintenance And Central Station Monitoring. Case Studies, Component And System Functional Life Expectancy, When Should An Overhaul And Upgrades Be Performed, Smoke Detector Life Expectancy, Alarm Company Definitions And Interpretation, The Authority Having Jurisdiction (AHJ), Policies And Procedures, Manufacturers Specifications, UL Standards, NFPA Standards And Nationally Recognized Industry Standards And Practices, Duties Of An Alarm Company And Contractual Terms And Conditions Of Alarm Companies. Participants: NICET Certified Technicians And Fire Alarm Company Managers, Service Technicians And Owners.
- May 2002 Instructor, New York City Police Department (NYPD), Office Of The Chief Of Department, Basic Methods Of Security Course, Queens College, New York. Topics: Intrusion Detection Systems, Life Safety Systems, Physical Security, Security Analysis And Survey, Bank Security, Workplace Violence, Case Studies, Defects And Irregularities In Alarm System Design, Installation And Central Station Monitoring, Manufacturer's Specifications, UL Standards, NFPA Standards, Nationally Recognized Industry Standards And Practices. Participants: New York City Police Department And Crime Prevention Officers, Counter Terrorism Task Force.
- April, 2002 Instructor, Property Loss Research Bureau (PLRB) Claims Conference 2002, Anaheim Convention Center. Anaheim, California. Fraud, Subrogation And Lightning Damage: A Focus In Burglar And Fire Alarm Systems. Topics: Defects And Irregularities In Security System Design, Overview Of Fire Detection Devices, Manufacturers Specifications, UL Standards, NFPA Standards And Nationally Recognized Industry Standards And Other Practices In The Alarm Industry And The Technical Community. Participants: Plaintiff And Defendant Attorneys From The Insurance Industry And In Private Practice. Course Acceptance: Continuing Education Units And Professional Development Approved By The Insurance Departments In The States Of Delaware, New Hampshire, North Carolina, Texas And For CPCU (Chartered Property Casualty Underwriters) And The Society Of Professional Adjusters.

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- February, 2002 *Instructor*, New York City Police Department (NYPD), Office Of The Chief Of Department, Basic Methods Of Security Course, Queens College, New York Topics: Intrusion Detection Systems, Life Safety Systems, Physical Security, Security Analysis And Survey, Bank Security, And Workplace Violence. Participants: FBI, DEP, FAA, Kroll Organization, Port Authority Police, NYPD, Crime Prevention, Joint Terrorists Task Force, Fire Marshall's Office, Mayor's Office.
- Presenter, Parent Council Meeting, Lubavitch On The Palisades, Physical And Electronic Security Counter-Measures, Identifying Threats, New Jersey, October 2001.
- Instructor, National Association Of Independent Insurance Adjusters Eastern Regional Conference, Everything Adjusters Need To Know About Protection Systems And More, Cape May, New Jersey, September 2001.
- Instructor, New Jersey Burglar And Fire Alarm Association, Case Studies Of Alarm Liability And How To Minimize Your Loss Potential When Designing, Installing, Servicing, Maintaining And Monitoring Security And Fire Alarm Systems, Clifton, New Jersey – Sponsored By Ademco And Rapid Response Monitoring, September 2001.
- Instructor, New York City Police Department (NYPD), Office Of The Chief Of Department, Basic Methods Of Security Course, St. John's University, Queens Campus, June 2001.
- Presenter, SEAK, Inc. Seminar, Sheraton Hotel, Hyannis Cape Cod, Massachusetts, June 2001.
- Instructor, Lightning Damage Claims And Other Claims Involving Alarm Systems, Prudential Insurance Horsham, Pennsylvania, May 2001.
- Instructor, Intrusion Detection Systems, New York City Police Department (NYPD), Office Of The Chief Of Department, Basic Methods Of Security Course Crime Prevention Bureau St. Johns University, Queens Campus, December, 2000.
- Instructor, Case Studies Of Alarm Liability, National Fire Protection Association (NFPA) Fall Education Conference 2000, Orlando, Florida, November 2000.
- Instructor, Case Studies Of Alarm Liability, Presented To Alarm Dealers At Alarm Distributors (NBFAA Certified Course) February 2000.
- Workshop Chair, Property Loss Research Bureau (PLRB) Claims Conference, Chicago, Illinois 2000.
- Chairman, Temple Emanuel Security Committee, Closter, New Jersey, January 2000.
- Certified Instructor, National Burglar & Fire Alarm Association (NBFAA) 1999.
- Instructor, New Jersey Burglar And Fire Alarm Association 1999.
- Chairman, Property Loss Research Bureau (PLRB) Claims Conference, New Orleans. Understanding Burglar And Fire Alarms 1999.
- Instructor To The Regional Alarm Association (RAA) 1999.
- Instructor To The International Security Conference (ISC), New York Conference, Intermediate Corporate Application (1999).
- Instructor, New York City Police Department (NYPD) Police Training Academy (1998).
- Instructor To The Regional Alarm Association (RAA) 1998.
- Instructor To The International Association Of Electrical Inspectors (IAEI) (1998).
- Instructor To The Metropolitan Burglar And Fire Alarm Association (MBFAA) (1998).
- Instructor To The New Jersey Burglar And Fire Alarm Association (NJBFAA) (1998).
- Instructor To The Virginia Burglar And Fire Alarm Association (VBFAA) (1998).
- Instructor To The International Security Conference (ISC), Las Vegas, Advanced Corporate Application Seminar, (1998).
- Instructor To The International Security Conference (ISC), Chicago Conferences (1998).
- Instructor To The Central Station Alarm Association (CSAA) (1998).
- Instructor's Certificate By The Texas Department Of Insurance; Continuing Education Program (1998).
- Instructor To The New Jersey Association Of Fire Equipment Distributors (NJAFED) (1998).

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- Seminar Panelist, Large Property Fraud Losses, Property Loss Research Bureau (PLRB) Chicago, IL (1998).
- Instructor, To The Mid-Hudson Alarm Association (MHAA) (1998).
- Participant, Understanding Risks With High Burglary Exposures: Management Systems To Reduce Losses, Central Station Alarm Association Seminar (1997).
- Instructor, CCTV Security Systems, What You Should Know!, NYPD Patrol Borough Manhattan North A.P.P.L. Conference (1997).
- Instructor, How To Protect Your Company From Litigation And What To Do If You Are Sued, Metropolitan Burglar And Fire Alarm Association (MBFAA) (1997).
- Instructor, New Jersey Burglar And Fire Alarm Association, Two Seminars (1997).
- Instructor To The Metropolitan Burglar And Fire Alarm Association (MBFAA) (1997).
- Instructor To The New Jersey Burglar And Fire Alarm Association (NJBFAA) (1996).
- Instructor, How An Expert's Eye For Detail Can Give You The Edge In Claims Investigations, NYPD Crime Prevention Unit And Claims Personnel Of The Insurance Industry (1996).
- Instructor, Loss Control Crime Prevention Program, Insurance Risk Managers, Underwriters And New York City Police Department (NYPD) Crime Prevention Unit (1996).
- Instructor, New York City Police Department (NYPD) Police Training Academy (1996).
- Instructor To The International Association Of Arson Investigators [IAAI].
- Instructor, How Secure Are Your Security Systems, Museum, Library And Cultural Property Protection American Society For Industrial Security (ASIS) Committee, The Frick Museum (1996).
- Consultant And Keynote Speaker To Over 300 Alarm Dealers, AFY Annual Security Convention, Orange, New Jersey (1995).

FORENSIC ALARM SCIENCE LABORATORY EXPERIENCE:

Mr. Zwirn Is Court Qualified In The Forensic Study Of Alarm Systems. This In Part Is Based On His Extensive Experience In The Analysis, Examination, Investigation, And Testing Of Equipment, Materials, And Products Regarding A Multitude Of All Different Types Of Security And Fire Alarm Systems, Appliances, Devices, And Sensors, In The Performance Of Security And Fire Alarm System Forensic Analysis And Investigation Related Experiments, Including But Not Limited To:

Hardwired, Hybrid & Wireless Systems
System Operation And Wiring
Burglar Alarm Control Panels
Primary And Secondary Power Supplies
Digital Alarm Communicator Transmitter
RJ-31X Telephone Jack And Coupler Cord
Door Contacts
Safe Contacts
Machine Wired Screens
Motion Detectors
Ultrasonic Detectors
Dual Technology Motion Detectors
Shock And Vibration Sensors
Fire Alarm Systems
Notification Appliance Boosters
Deluge Systems
Hardwired And Wireless Initiating Detection Devices

Internal System Programming
Burglar Alarm Systems
System Transformers
Burglar Alarm System Keypads
Network Interface Device (NID)
Intrusion Detection Sensors
Recessed Contacts
Bell And Siren Housings
Window Bugs
Active And Passive Infra-Red Sensors
Microwave Detectors
Audio Glass Break Detectors
Safe And Vault Detection Sensors
Fire Alarm Control Units
Strobe Lights
Waterflow And Gate Valve Switches
Dual Diversity Radio Receiving Units

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Ionization Smoke Detectors
Beam Detectors
Rate Of Rise Heat Detectors
Carbon Monoxide Detectors
NFPA Standards
Machine Wired Alarm Screens
Audio Listen Back Microphones
Proximity Alarms
Aspiration Systems
ETL, NRTL & UL Listings
Single and Multiple Array Audio Microphones
For Security Applications

Long Range Wireless Radio
Telephone Line Security
One & Two Way GSM Wireless Transmitters
Long Range Radio Wireless Transmitters
Audible Indicating Appliances
Photo-Electronic Smoke Detectors
Duct Detectors
Manual Fire Alarm Pull Stations
Addressable Modules
Natural Gas Detectors
Medial Alarm Systems
Audio Active Microphones
Electronic Vibration Detection
VAML Control Panels
Photo Electronic Infrared Beams
Intrinsically Safe Products

CERTIFICATIONS, SPECIALIZED EDUCATION, AND TRAINING:

- SecurityCEU⁵⁵ Instructor; Created Training Curriculum For Alarm Science Basics And Alarm Science Case Studies Courses.
- Level I NICET Certified In Fire Protection Engineering Technology/ Inspection and Testing of Fire Alarm Systems, National Institute For Certification In Engineering Technologies-A Division Of The National Society Of Professional Engineers.
- Level II NICET Certified In Fire Protection Engineering Technology/, Inspection and Testing of Fire Alarm Systems, National Institute For Certification In Engineering Technologies-A Division Of The National Society Of Professional Engineers.
- *Fundamentals Of Risk Management, IS-00454*, FEMA Certificate Of Achievement, Emergency Management Institute, United States Department of Homeland Security, March 2015.
- *Introduction To Incident Command System, IS-00100.b*, FEMA Certificate Of Achievement, Emergency Management Institute, United States Department Of Homeland Security, March 2015.
- The City Of New York Fire Department Certificate Of Acceptance For The Maintenance Of Smoke Detectors Provided Under The New York City Fire Department Rule 3, RCNY Section 17-06.

⁵⁵ SecurityCEU.com was started 20 years ago to be a purely informational portal for security professionals to learn about industry certifications and licensing requirements. At the request of our customers, we began to add online continuing education courses that supported the licenses and certifications of which we were helping inform the industry. Today the site has more than 190 hours of online continuing education courses for the security, fire, and life safety industry. We have over 380,000 registered students and support each and every one with chat, online, and phone technical support. SecurityCEU.com is owned and operated by The CMOOR Group. Known worldwide for their custom online training and industry specific Learning Management System (LMS), CMOOR has over 3,400 clients claimed in the security, fire, and life safety industry.

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- Central Station Alarm Operator Level One Certified-The Central Station Alarm Association.⁵⁶
- Central Station Alarm Operator Level Two Certified-The Central Station Alarm Association.
- National Fire Protection Association (NFPA) Certificate Of Appointment Building Code/Safety To Life-Detention And Correctional Occupancies Committee, Principal Member, Representing The Automatic Fire Alarm Association (AFAA).
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Selling Effective Security Systems*, Course Code BUS-13(7) C033, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *What is NFPA 731? Standard For The Installation Of Electronic Premises Security*, Course Code L/C 13(7) C032, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *What Is NFPA 730? Guide For Premises Security*, Course Code L/C 13(7) C031 Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Troubleshooting, Service And Maintenance*, Course Code TECBF-13(7) C030, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Got Liability? A Forensic Alarm Expert's Perspective*, Course Code BUS-13(7) C037 Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Alarm Company Ethics*, Course Code BUS-13(7) C036, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Alarm System Programming*, Course Code TECBF-13(7) C035, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Fire Alarm System Technical Writing Course*, Course Code TECFA-13(7) C034, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.

⁵⁶ CSAA is the only known association offering online training courses geared specifically toward central station operators and managers. Both CSAA's Level 1 and Level 2 courses include students worldwide in the United States, Canada, South America, and the Caribbean, and include Fortune 500 companies and DOD (Department of Defense) entities. And the program continues to grow. To date, nearly 11,000 industry professionals have taken CSAA's online training courses, including the Level 1 and Level 2 courses, the False Alarm Reduction course, and the Alarm Industry Employee Orientation online training course. According to CSAA Past President Ralph Sevinor, president of Wayne Alarm Systems, "The CSAA online training program is a consensus-pacing online program allowing flexibility, best practices, state-of-the-art technology and measurable tracking of proficiency. The courses are regularly updated and reviewed by subject matter experts in their individual field of expertise, including technologists, industry field experts, police, and fire services personnel."

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- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Design And Installation Technical Writing Course*, Course Code BUS-13(7) C029, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Service Ticket Technical Writing Course*, Course Code BUS-13(7) C028, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Designing Fire Alarm Systems*, Course Code TECFA-13(7) C014, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Industrial Safety: NFPA 70E: Electrical Safety In The Workplace*, Course Code L/C 13(7) C015, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Fire Alarm Signaling Systems*, Course Code TECFA-13(7) C016, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *NFPA, The National Fire Alarm Code®*, Course Code TECFA-13(7) C002, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Smoke Detectors-The Science Of Automatic Detection*, Course Code TECRF-13(7) C001, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *International Residential Code*, Course Code L/C, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Understanding The Fire Protection Handbook*, Course Code L/C-13(7) C017, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *The National Electrical Code (NEC)*, Course Code L/C, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Ambush, Holdup And Panic Alarm Systems*, Course Code TECBA-13(7) C018 Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Carbon Monoxide Design And Installation*, Course Code TECFA-13(7) C019, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Identifying Irregularities In Security System Design, Installation, Application, Programming, Testing, Inspection, Service, Maintenance & Remote Station Monitoring*, Course Code TECBA-13(7) C010, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Electronic Countermeasures To Highly Skilled & Other Types Of Burglariious Circumvention Attacks*, Course Code TECBA 13(7) C009, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *The Alarm Contractor: Policies, Procedures, Customs & Habits*, Course Code BUS-13(7) C008, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.

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- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Fire Alarm System Inspection, Testing & Maintenance*, Course Code TECFA-13(7) C007, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Telephone Line Security Methodologies*, Course Code TECBA-13(7) C006, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Burglar Alarm System Testing, Inspection & Maintenance*, Course Code TECBA-13(7) C005, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *The Alarm Technician: Policies, Procedures, Customs Habits, Training & Supervision*, Course Code TECBA-13(7) C004, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Existing Systems And Takeovers*, Course Code BUS-13(7) C002, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Security Surveys And Risk Analysis*, Course Code TECBA-13(7) C020, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.⁵⁷
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Machine Wired Screens: Proper Application And Installation*, Course Code TECBA-13(7) C021, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Recessed Contacts: Aesthetically Pleasing Or The New Liability*, Course Code TECBA-13(7) C022, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Overt And Covert CCTV Systems*, Course Code TECES-13(7) C023, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Alarm Science*, Course Code TECBF-13(7) C024, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Residential Security & Fire Alarm Systems*, Course Code TECBA-13(F) C025, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.

⁵⁷ The Fire Alarm, Burglar Alarm and Locksmith Advisory Committee is created within the Division of Consumer Affairs in the Department of Law and Public Safety, under the Board of Examiners of Electrical Contractors. The board shall have the following powers and duties, or may delegate them to the committee: a. To set standards and approve examinations for applicants for a fire alarm, burglar alarm or locksmith license and issue a license to each qualified applicant; b. To administer the examination to be taken by applicants for licensure; c. To determine the form and contents of applications for licensure, licenses and identification cards; d. To adopt a code of ethics for licensees; e. To issue and renew licenses and identification cards; f. To set the amount of fees for fire alarm, burglar alarm and locksmith licenses, license renewal, applications, examinations and other services provided by the board and committee, within the limits provided in subsection b. of section 11 of this act; g. To refuse to admit a person to an examination or refuse to issue or suspend, revoke, or fail to renew the license of a fire alarm, burglar alarm, or locksmith licensee pursuant to the provisions of P.L.1978, c.73 (C.45:1-14 et seq.); h. To maintain a record of all applicants for a license; i. To maintain and annually publish a record of every licensee, his place of business, place of residence and the date and number of his license; j. To take disciplinary action, in accordance with P.L.1978, c.73 (C.45:1-14 et seq.) against a licensee or employee who violates any provision of this act or any rule or regulation promulgated pursuant to this act; k. To adopt standards and requirements for and approve continuing education programs and courses of study for licensees and their employees; l. To review advertising by licensees; and m. To perform such other duties as may be necessary to effectuate the purposes of this act.

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- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Commercial Security & Fire Alarm Systems*, Course Code TECBF-13(7) C026, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Understanding UL Certificated Systems And Standards*, Course Code TECBF-13(7) C027, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Barrier Free Subcode*, L/C13(7) C011, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Americans With Disabilities Act* Course Code L/C-13(7) C012, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *New Jersey Uniform Construction Code*, L/C-13(7) C013, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- New Jersey Fire Alarm, Burglar Alarm & Locksmith Continuing Education Instructor, *Fire Alarm, Burglar Alarm & Locksmith Laws & Regulations*, L/C-16(7) C040, Approved By The Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee.
- Qualified By The Court As An Expert In The Forensic Study Of Alarm Systems.
- New York City Fire Department Certificate Of Fitness⁵⁸, Certificate Number 83021212.⁵⁹
- Certified Security And Fire Alarm System Instructor For The State Of New York Department Of State, Pursuant To Section 196.24 Of The Rules And Regulations Established By The New York State Secretary Of State, Instructor ID 1-73.
- Fire Protection Engineering Technology/Automatic Sprinkler System Layout Level One Certification By The National Institute For Certification In Engineering Technologies (NICET).
- NICET Level I Certified In Fire Protection Engineering Technology/Fire Alarm Systems By The National Institute for Certification In Engineering Technologies- A Division of the National Society Of Professional Engineers.
- NICET Level II Certified Engineering Technician (CET), Fire Protection Engineering Technology/Fire Alarm Systems By The National Institute for Certification In Engineering Technologies- A Division Of The National Society of Professional Engineers.
- NICET Level III Certified Engineering Technician (CET), Fire Protection Engineering Technology/Fire Alarm Systems By The National Institute for Certification In Engineering Technologies- A Division Of The National Society Of Professional Engineers.
- NICET IV Certified Senior Engineering Technician, Fire Protection Engineering Technology/Fire Alarm Systems, By The National Institute for Certification In Engineering Technologies- A Division Of The National Society Of Professional Engineers.⁶⁰
- State Of New Jersey, Office Of The Attorney General, Department Of Law And Public Safety, Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee, Burglar Alarm License Number 34BA00009000. Recertification Cycle Is Every Three Years, And Requires 36 Hours Of Continuing Education Credits.

⁵⁸ The Fire Department of the City of New York issues Certificates of Fitness for various occupations by providing tests to applicants. Certificates of Fitness are required by laws and regulations to conduct certain businesses within the New York City for hazardous occupations.

⁵⁹ May 18, 2007 through May 4th, 2010.

⁶⁰ NICET is a non-profit division of the National Society of Professional Engineers that recognizes that through education, experience and knowledge that the certificant has met the standards set forth by this institute.

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- State Of New Jersey, Office Of The Attorney General, Department Of Law And Public Safety, Division Of Consumer Affairs, Fire Alarm, Burglar Alarm And Locksmith Advisory Committee, Fire Alarm License Number 34FA00009000. Recertification Cycle Is Every Three Years, And Requires 36 Hours Of Continuing Education Credits.
- State Of New Jersey Department Of Community Affairs, Division Of Fire Safety, Fire Protection Equipment Contractor Business Permit, Permit ID P00765.
- State Of New Jersey, Department Of Community Affairs, Division Of Fire Safety, Fire Alarm System Certification, ID Number 155643.
- State Of Florida Department Of Business And Professional Regulation Electrical Contractor's Licensing Board Continuing Education Provider⁶¹ ECLB 0001804 Course #ECLB0006862.
- Certificate, New Jersey Special Investigators Association Fraud Seminar (1997).
- State Of Florida Department Of Business And Professional Regulation Continuing Education, Burglar And Fire Alarm Systems (1996).
- Listed In Who's Who In The Alarm Industry; National Burglar & Fire Alarm Association (NBFAA) (1995-96).
- Graduate, Fire School Of The Broward County Fire Academy (1993).
- Broward County Central Examining Board Of Electricians Continuing Education, Burglar And Fire Alarm Systems (1992, 1996).
- National Security Dealer Examination, Certificate Of Proficiency (1991).
- Continuing Education Courses, Seminars, Workshops And Conventions (1980 – Present).
- Multi-State Court Qualified Alarm And Security Expert.
- Security Dealer 25th Anniversary Club.
- American Society For Industrial Security (ASIS) – Arlington, Virginia.
- Certified Protection Professional⁶² (CPP) Board Certified In Security Management-ASIS International.
- Certified Fire Protection Specialist⁶³ (CFPS) – National Fire Protection Association International (NFPA).
- Association Of Certified Fraud Examiners – Austin, Texas.
- Certified Fraud Examiner⁶⁴ (CFE)⁶⁵.
- Fellow, American College Of Forensic Examiners Institute (FACFEI).
- Certified By The American College Of Forensic Examiners.
- Certified In Homeland Security, Level IV - American Board Of Certification In Homeland Security, American College Of Forensic Examiners International, Inc.
- Florida State Certified Alarm Contractor One.⁶⁶

⁶¹ “61G6-9.007 Qualifications of Course Instructors. (1) All course instructors shall be qualified, by education or experience, to teach the course or parts of a course, to which the instructor is assigned.” Electrical Contractor's Licensing Board-Rule 61G6, Florida Administrative Code.

⁶² ASIS certifications have recently been awarded the SAFETY Act Designation by the U.S. Department of Homeland Security. Individuals who hold ASIS certifications as a Certified Protection Professional (CPP), now have protection from lawsuits involving ASIS certification and the ASIS certification process that arise out of an act of terrorism.

⁶³ On September 19th, 2006, the CFPS program was granted accreditation by the ANSI Personnel Certification Accreditation Committee. The ISO 17024 accreditation is an important milestone for CFPS and for the fire protection field of practice. Fire Protection Specialists holding the CFPS designation possess the necessary skills and experience to effectively implement fire protection policies and strategies.

⁶⁴ The FBI, U.S. Department of Defense, Government Accountability Office, Postal Inspection Service and the Integrated Market Enforcement (IMET) Branch within the Royal Canadian Mounted Police officially recognize the CFE designation for their fraud investigators.

⁶⁵ The CFE Credential is recognized in the hiring and promotion policies of leading organizations, including the FBI, The U.S. Department of Defense, and the Forensic Audits and Special Investigations Units of the U.S. Government Accountability Office.

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- Florida State Registered Electrical Contractor.
- Dade County Board Certified Master Alarm Technician.
- Broward County Burglar And Fire Alarm Certified Specialty Electrician.
- Palm Beach County Certified Burglar And Fire Alarm Contractor.
- New York State Certified Burglar And Fire Alarm Contractor.
- Appointment And Recognized By The National Fire Protection Association As A Subject Matter Expert.
- Recognized Expert By Security Sales & Integration Magazine.
- Recognized Expert By SP&T News-Canada's #1 Magazine For Security Dealers And System Integrators.
- New Jersey Board Of Examiners Of Electrical Contractors- Fire Alarm, Burglar Alarm And Locksmith Advisory Committee, November 21st, 2000 Meeting, Selected By Committee As A Burglar Alarm Subject Matter Expert And Fire Alarm Subject Matter Expert To Participate In Burglar And Fire Alarm Examination Development Workshops.

BOARD APPOINTMENT, TECHNICAL PANEL MEMBERSHIP, SIA JUDGE QUALIFICATION, PROFESSIONAL AFFILIATIONS, AND ACCOMPLISHMENTS:

- Appointed to ASTM International Committee E30 On Forensic Sciences.
- Appointed To The ASIS Fire & Life Safety Steering Committee.
- Appointed UL- Underwriters Laboratories, Inc. Task Group Leader on Interpretation of UL and NFPA 72 Standards. Task Group Members: Merton Bunker, PE, Art Black, Carmel Fire Protection- AHJ, John Drucker, AHJ, Vito Badalementi, and Larry DeGeorge.
- Technical Committee Member of Residential Occupancies (BLD-RES) of NFPA 5000, Building Construction and Safety Code®. This Code Provides Requirements for Those Construction, Protection, and Occupancy Features Necessary to Safeguard Life, Health, Property, and Public Welfare and Minimize Injuries.
- Technical Committee Member of Residential Occupancies (SAF-RES) of NFPA 101, Life Safety Code®. This Code is the Most Widely Used Source for Strategies to Protect People Based on Building Construction, Protection, and Occupancy Features That Minimize the Effects of Fire and Related Hazards. Unique in the Field, it is the Only Document That Covers Life Safety in Both New and Existing Structures.
- Stakeholder for UL 2800, Interoperable Medical Device Interface Safety.
- Member of the National Sheriffs' Association (NSA).
- Member of the International Association of Arson Investigators, Inc. (IAAI).
- Member of the International Association of Special Investigation Units (IASIU).
- Underwriters Laboratories, Inc. (UL) Standards Technical Panel Member, STP 260, Check, Dry Pipe, And Alarm Valves For Fire Protection Service Covering: UL 193-Alarm Valves For Fire-Protection Service, UL 260-Check, Dry Pipe, And Alarm Valves For Fire Protection Service Covering, UL 312-Check Valves For Fire-Protection Service, UL 753-Alarm Accessories For Automatic Water-Supply Control Valves For Fire Protection Service, UL 1469-Strength Of Body And Hydraulic Pressure Loss Testing Of Backflow Special Check Valves, And UL 1486-Quick Opening Devices For Dry Pipe Valves For Fire-Protection Service.
- Awarded The Security Industry Association (SIA) Membership Milestone Award.
- Appointed Ambassador⁶⁷ For 2012 ESX Nashville: Tune Into The Future, Nashville, Tennessee.

⁶⁶ "Alarm system contractor" means a person whose business includes the execution of contracts requiring the ability, experience, science, knowledge, and skill to lay out, fabricate, install, maintain, alter, repair, monitor, inspect, replace, or service alarm systems for compensation, including, but not limited to, all types of alarm systems for all purposes." (a) "Alarm system contractor I" means an alarm system contractor whose business includes all types of alarm systems for all purposes." FS 489.505 (2) and (2a).

⁶⁷ ESX Nashville: Tune Into The Future, Nashville, Tennessee

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- Recognized Subject Matter Expert (SME) In The Development Of the Security Sales Essentials Training Program, Published by The Electronic Security Association™ (ESA), The National Training School (NTS).
- Member Of The ASIS International Fire & Life Safety Council.⁶⁸
- Member Of The Workplace Violence Prevention And Intervention (WVPI) Committee.⁶⁹ Participated In The Creation Of ASIS/SHRM WVPI.1-2011, An American Standard, Workplace Violence Prevention And Intervention⁷⁰, Approved September 2, 2011 By The American National Standards Institute, ASIS International And The Society For Human Resource Management.
- Appointed By The New Jersey Burglar Alarm And Locksmith Advisory Committee To Participate As A Subject Matter Expert In Exam Development Workshops For Burglar Alarm Examination, November 2000.
- Appointment By The New Jersey Burglar Alarm And Locksmith Advisory Committee To Participate As A Subject Matter Expert In Exam Development Workshops For The Fire Alarm Examination, November 2000.
- Member Of The Security Industry Association (SIA) Standards Council⁷¹ (SISC) And Of The Security Industry Association Monitoring Advisory Council (SIA).
- Member Of The Security Industry Association (SIA) Standards Committee.
- Underwriters Laboratories, Inc. (UL) Standards Technical Panel Member, STP 294, Access Control Systems, Covering The Following Standards: UL 294A-Standard For Access Control Systems, UL 294B-Standard For Access Control Systems Using Power Over Ethernet (PoE), And UL 294C-Standard For Short Range Radio Frequency Devices Used In Access Control Systems.

⁶⁸ This Council coordinates with ASIS headquarters and provides education to the membership on issues related to fire and life safety, including Occupation Safety and Health Administration and other regulatory institutions.

⁶⁹ The WVPI Committee is comprised of both The American Society for Industrial Security (ASIS) and The Society For Human Resource Management (SHRM) members in a collective effort to develop the joint WVPI American National Standard.

⁷⁰ This Standard provides an overview of policies, processes, and protocols that organizations can adopt to help identify and prevent threatening behavior and violence affecting the workplace, and to better address and resolve threats and violence that have actually occurred. This Standard describes the personnel within organizations who typically become involved in prevention and intervention efforts; outlines a proactive organizational approach to workplace violence focused on prevention and early intervention; and proposes ways in which an organization can better detect, investigate, manage, and – whenever possible – resolve behavior that has generated concerns for workplace safety from violence. The Standard also describes the implementation of a Workplace Violence Prevention and Intervention Program, and protocols for effective incident management and resolution.

⁷¹ The SISC was formed to provide a forum for the various facets of the security industry. It has two main areas of responsibility. The responsibilities of the SISC as a “Balanced Consensus Body” for standards production are distinct and separate from the additional function of the SISC to act as an umbrella organization that co-ordinates, evaluates and delegates standards production tasks to the best qualified participating Standards Development Organization (SDO). ANSI looks upon co-ordination and harmonization as positive and necessary elements of any standards program. These additional and separate functions of the SISC therefore enhance standards production efforts and reflect the industry’s will to comply with ANSI’s National Standards Strategy. SIA is the Secretariat for this counsel. The SISC will be the Balanced Consensus body that votes on proposed standards that are being considered from ASIS International, Central Station Alarm Association, National Burglar and Fire Alarm Association and Security Industry Association. Scope: To oversee electronic security industry standards activities, including those activities related to all products and services associated with the design, production, distribution, installation, monitoring, maintenance, and other treatment of electronic security equipment, including alarm and non-alarm equipment. Review and coordinate the standards activities of member SDOs. Vote on draft standards submitted by organizationally accredited, member SDOs. Review proposed new, revised, or withdrawn standards and their associated development documentation to approve (or disapprove) actions on ANSI accredited standards. Identify and include any additional Interest Segments in the security industry or Standards Developing Organizations (SDOs) developing standards for the industry. Identify related organizations with relevant expertise for SDO assistance and coordination in their individual standards projects. Maintain relationships with organizations that could affect the security industry and participate in their standards activities.

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- Underwriters Laboratories, Inc. (UL) Standards Technical Panel Member, STP 2075, Gas And Vapor Detectors And Sensors.
- Member-Task Group For Underwriters Laboratories (UL) Standards Technical Panel (STP) For Remote Connection.
- Member-Task Group For Underwriters Laboratories (UL) Standards Technical Panel (STP) For Alarm System Services (STP 205).⁷²
- National Fire Protection Association (NFPA) Task Group Member, NFPA 720 Carbon Monoxide Detection, Re-Write Task Group.
- National Institute For Certification In Engineering Technologies (NICET) Job/Task Analysis Group Member, Subject Matter Expert, Fire Alarm System Certification.⁷³
- Member Of The Security Industry Association (SIA).
- Member Of The Fire Alarm And Life Safety Technical Committee, Electronic Security Association⁷⁴ (ESA) (Formerly The National Burglar And Fire Alarm Association *NBFAA*).
- Member Of The Fire Protection Industry Group, Security Industry Association (SIA).
- Certified Member Of The American Society Of Certified Engineering Technicians (ASCET).
- Identified Defect In UL Listed Carbon Monoxide Detector Which Led To The Recall Of Approximately 74,000 Units By The U.S. Consumer Products Safety Commission.
- National Fire Protection Association (NFPA) Certificate Of Appointment- Signaling Systems For The Protection Of Life And Property- Principal Member Of The Technical Committee On Fundamentals Of Fire Alarm Systems, NFPA 72®.⁷⁵⁷⁶
- Member - National Fire Protection Association (NFPA) Fire Science & Technology Educators Section.⁷⁷

⁷² This task group will be undertaking a review of UL 681, Standard for Installation and Classification of Burglar and Holdup Alarm Systems, pursuant to returning proposed revisions to UL 681 as follows; 1. Organizational revisions intended to simplify the use of the standard by industry. 2. Technical revisions that will clarify the use of new and existing technologies. 3. Clarification of the interconnection of control units with external transmission equipment. The task group may identify additional objectives relative to UL 681 and expanded their work accordingly. Proposed revision to UL 681 which is returned from the task group will be advanced through UL's ANSI accredited consensus standards development process, pursuant to formally adopting the proposed revisions as a new edition, ANSI/UL 681 Standard.

⁷³ Task group members participate in writing exam questions for the NICET Fire Alarm System Certification Program. The examination questions are derived from the outline of the job/task analysis which task group members created and/or participated in, of which, encompass each work element of the testing program for certification Levels I, II, III, and IV, through the National Institute for Certification in Engineering Technologies, which recognizes that through education, experience, and knowledge, the person has met the rigorous standards set forth by NICET.

⁷⁴ Our membership includes more than 2,600 electronic life safety, security, and systems businesses in all 50 states and four U.S. territories, which employ more than 500,000 industry professionals, servicing more than 25 million residential and commercial accounts. ESA represents more than seventy percent of the market for intrusion and fire/life safety systems, access control, video surveillance and monitoring.

⁷⁵ NFPA 72 covers the application, installation, location, performance, and maintenance of fire alarm systems and their components.

⁷⁶ Technical Committee Member from July of 2002 through November 2009.

⁷⁷ The Fire Science and Technology Educators (FSTE) Section promotes the exchange of ideas and information related to curricula development, teaching resources, and program administration. It also stimulates and participates in research to further the objectives NFPA.

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- Underwriters Laboratories, Inc. (UL) Standards Technical Panel Member, STP 0217, Smoke Detectors And Alarms, Covering The Following Standards: UL 217, Single And Multiple Station Smoke Alarms, UL 268, Smoke Detectors For Fire Alarm Signaling Systems And UL 268A Smoke Detectors For Duct Application.
- Underwriters Laboratories, Inc. (UL) Standards Technical Panel Member, STP 1730, Smoke Detector Monitors And Accessories For Individual Living Units Of Multifamily Residence And Hotel/Motel Rooms.
- Underwriters Laboratories, Inc. (UL) Standards Technical Panel Member, STP 0260, Valves For Fire-Protection Service, Covering The Following Standards: UL 193, Standard For Alarm Valves For Fire-Protection Service, UL 246, Standard For Hydrants For Fire-Protection Service, UL 260, Standard For Dry Pipe And Deluge Valves For Fire-Protection Service, UL 262, Standard For Gate Valves For Fire-Protection Service, UL 312, Standard For Check Valves For Fire-Protection Service, UL 789, Standard For Indicator Posts For Fire-Protection Service, UL 1091, Standard For Butterfly Valves For Fire-Protection Service, UL 1468, Standard For Direct Acting Pressure Reducing And Pressure Restricting Valves, UL 1469, Standard For Strength Of Body And Hydraulic Pressure Loss Testing Of Backflow Special Check Valves, UL 1478, Standard For Fire Pump Relief Valves, UL 1486, Standard For Quick Opening Devices For Dry Pipe Valves. For Fire Protection Service, UL 1726, Standard For Automatic Drain Valves For Standpipe Systems, And UL 1739, Standard For Pilot-Operated Pressure-Control Valves For Fire-Protection Service.
- Underwriters Laboratories, Inc. (UL) Standards Technical Panel Member, STP 2238, Cable Assemblies And Fitting For Industrial Control And Signal Distribution.
- Underwriters Laboratories, Inc. (UL) Standards Technical Panel Member, STP 1977, Data, Signal, Control And Power Connectors.
- Underwriters Laboratories, Inc. (UL) Standards Technical Panel Member, STP 0864, Fire Protection Signaling Equipment, Covering The Following Standards: UL 864, Standard For Safety For Control Units And Accessories For Fire Alarm Systems; UL 1481, Standard For Safety For Power Supplies For Fire-Protective Signaling Systems And UL 1711, Standard For Safety For Amplifiers For Fire Protective Signaling Systems.
- Underwriters Laboratories, Inc. (UL) Standards Technical Panel Member, STP 2017, Purpose Signaling Devices And Systems.
- Underwriters Laboratories, Inc. (UL) Standards Technical Panel Member, STP 0010 Fire Doors, Covering The Following Standards: UL 9, Standard For Fire Tests On Window Assemblies; UL 10A, Standard For Tin-Clad Fire Doors; UL 10B, Standard For Fire Tests Of Door Assemblies And UL 10C, Standard For Positive Pressure Fire Tests Of Door Assemblies, 14B, Standard For Sliding Hardware For Standard, Horizontally Mounted Tin-Clad Fire Doors, 14C, Standard For Swinging Hardware For Standard Tin-Clad Fire Doors Mounted Singly And In Pairs.
- Underwriters Laboratories, Inc. (UL) Standards Technical Panel Member, STP 205, Alarm System Services, Covering The Following Standards: UL 681, Installation And Classification Of Burglar And Holdup Alarm Systems, UL 827, Central-Station Alarm Services, UL 1641, Installation And Classification Of Residential Burglar Alarm Systems And UL 1981, Central-Station Automation Systems.
- Underwriters Laboratories, Inc. (UL) Standards Technical Panel Member, STP 205A, Premises Security-Control Units And Accessories, Covering The Following Standards: UL 294, Access Control System Units, UL 365, Police Station Connected Burglar Alarm Units And Systems, UL 603, Power Supplies For Use With Burglar Alarm Systems, UL 609, Local Burglar Alarm Units And Systems, UL 636, Holdup Alarm Units And Systems, UL 1076, Proprietary Burglar Alarm Units And Systems, UL 1610, Central-Station Burglar-Alarm Units And UL 1635, Digital Alarm Communicator System Units.
- Underwriters Laboratories, Inc. (UL) Standards Technical Panel Member, STP 205B, Premises Security Initiating Devices, Covering The Following Standards: UL 606, Linings And Screens For Use With Burglar-Alarm Systems, UL 634, Connectors And Switches For Use With Burglar-Alarm Systems And UL 639, Intrusion-Detection Units.

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- Underwriters Laboratories, Inc. (UL) Standards Technical Panel Member, STP 205C, Residential Signal Equipment, Covering The Following Standards: UL 985 Household Fire Warning System Units, UL 1023, Household Burglar-Alarm System Units And UL 1637, Standard For Home Health Care Signaling Equipment.
- Underwriters Laboratories, Inc. (UL) Standards Technical Panel Member STP 205D, Antitheft Alarms And Devices, Covering The Following Standards: UL 1037, Antitheft Alarms And Devices.
- Underwriters Laboratories, Inc. (UL) Standards Technical Panel Member, STP 0521, Heat Detectors, Covering The Following Standards: UL 521, Heat Detectors For Fire Protective Signaling Systems.
- Underwriters Laboratories, Inc. (UL) Standards Technical Panel Member, STP 0038, Manual Signaling Boxes For Fire Alarm Systems.
- Underwriters Laboratories, Inc. (UL) Standards Technical Panel Member, STP 0752, Bullet Resisting Equipment, Covering The Following Standards: UL 972, The Standard For Burglary-Resisting Glazing Materials And UL 752, The Standard For Bullet-Resisting Equipment.
- Underwriters Laboratories, Inc. (UL) Standards Technical Panel Member, STP 0218, Fire Pump Controllers, Covering The Following Standards: UL 218, The Standard For Fire Pump Controllers And UL 218A, The Standard For Battery Contactors For Use In Diesel Engines Driving Centrifugal Fire Pumps.
- Underwriters Laboratories, Inc. (UL) Standards Technical Panel Member, STP 0555, Dampers-Fire, Smoke And Related, Covering The Following Standards: UL 555, Standard For Fire Dampers, UL 555C, Standard For Ceiling Dampers And UL 555S, Standard For Smoke Dampers.
- Qualified NPS Judge By The Security Industry Association (SIA), International Security Conference 2003, Las Vegas, Nevada.
- Qualified NPS Judge By The Security Industry Association (SIA), International Security Conference 2002, Orlando, Florida.
- Qualified NPS Judge By The Security Industry Association (SIA), International Security Conference 1999, New York, New York.
- Qualified NPS Judge By The Security Industry Association (SIA), International Security Conference 1998, Las Vegas, Nevada.
- Electronic Security Association⁷⁸ (ESA) *Formerly The National Burglar And Fire Alarm Association NBFAA.*
- American Society For Industrial Security.
- Association Of Certified Fraud Examiners.
- Former Board Of Directors: Broward County Crime Commission.⁷⁹
- International Association Of Electrical Inspectors.
- National Fire Protection Association.
- New Jersey Burglar And Fire Alarm Association.
- Security Industry Association
- The Monitoring Association
- Automatic Fire Alarm Association

⁷⁸ Our membership includes more than 2,600 electronic life safety, security, and systems businesses in all 50 states and four U.S. territories, which employ more than 500,000 industry professionals, servicing more than 25 million residential and commercial accounts. ESA represents more than seventy percent of the market for intrusion and fire/life safety systems, access control, video surveillance and monitoring.

⁷⁹ The Broward County Crime Commission was chartered in 1976 as a non-profit, non-partisan, non-political, tax-exempt fact-finding body. It acts on behalf of law-abiding citizens generally and the community at large in the first against crime and corruption. In this effort, it supports the major elements of the criminal justice system. It does not sit in judgment of community morals, act as a vigilante group, have any authority other than the weight of public opinion, nor have any extra-legal rights. It endorses ethical and moral considerations under the law and demands similar commitment from its members.

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PUBLICATIONS AND INTERVIEWS:

- *Life-Safety Lessons Learned From The Miami Condo Collapse*, Authored by Jeffrey D. Zwirn, Security Sales & Integration Magazine, February 2, 2022.
- Interviewed By The Washington Post, *What To Consider When Shopping For a Home Security System*, December 2021.
- Interviewed By The Miami Herald On The Champlain Towers Fire Alarm System Failure As Its Forensic Alarm Expert, *'Lives Would Have Been Saved': Fire Alarm Didn't Go Off Before Surfside Tower Collapses*, November 2021.
- *How Konnected Has Concocted False Claims*, Authored by Jeffrey D. Zwirn, Security Sales & Integration Magazine, April 2021.
- *DIY Danger: How Konnected Has Concocted False Claims About Its Alarm Panel Solution*, Authored by Jeffrey D. Zwirn, Security Sales & Integration Online Magazine, April 2021.
- *Alarm Science: Our Industry Cannot Make Assumptions When It Comes To Life Safety*, Authored by Jeffrey D. Zwirn, Security Industry Association (SIA) Center of Excellence, March 2021.
- Interviewed By Brad Berman,⁸⁰ Contributor, US News And World Report, *Home Security: Ring Alarm and Professionally Installed Home Security Systems By ADT*, November 2018.
- *Why Consumers Should Say No To SimpliSafe*, Authored by Jeffrey D. Zwirn, Security Sales & Integration Magazine, November 2016.
- *Alarm Contractors: Make Sure Your Insurance Policies Cover The Business You Secure*, Authored by Jeffrey D. Zwirn, Security Sales & Integration Magazine, March 2016.
- The Alarm Science Manual™ Was Featured In Security Sales & Integration Magazine, *11 Holiday Gift Ideas For Security Techs*, December 2015.
- Interviewed By Susan Crow, Director Of Communications, NSA, National Neighborhood Watch, A Division Of National Sheriffs' Association, *NNW Security System Review*, July/August 2015.
- The New Jersey Electronic Security Association (NJESA) Sponsored the Dissemination⁸¹ of *The Alarm Science Manual™: Scientific Advice And Advanced Methodologies To Help Your Company Minimize Liability Now*

⁸⁰ Bradley Berman writes about technology and consumer products on everything from cars to home security for publications including The New York Times, Popular Mechanics and MIT Technology Review. Berman investigates the intersection of technology, business and the environment, translating breaking trends into content that consumers use to make informed decisions. He serves as editorial director at InsideEVs.com and transportation editor at Home Power Magazine.

Berman's work has reached millions of people through the websites he created (HybridCars.com and PluginCars.com) and via his guest appearances on CNBC, BBC, CBS Evening News, National Public Radio and Pacifica Radio. He is currently co-writing a book about how electric and autonomous vehicles are changing America's love affair with the automobile. Berman earned a Bachelor of Fine Arts from Tufts University and a Master of Fine Arts in Film from New York University. His 2017 documentary, "Nat Bates For Mayor," was shown on KQED Public Television in San Francisco and at film festivals throughout the U.S.

⁸¹ Dear Attendee: In appreciation of your commitment of attending the 2015 New Jersey Electronic Security Association (NJESA) Symposium, and based on our commitment to providing you and your company with the best in alarm industry education and training, the NJESA is pleased to provide you with special access to receive an e-book copy of the first of its kind 339 page peer reviewed authoritative treatise entitled The Alarm Science Manual™ written by Jeffrey Zwirn. The Alarm Science Manual™ is intended to provide expert training for persons involved in the security survey, need analysis, system design, recommendation, application, installation, service, maintenance, repair, inspection, testing and monitoring of all types of residential, commercial, and industrial security alarm and life safety systems. With over four decades of expertise, Jeffrey is nationally recognized in the industry as a Subject Matter Expert in Alarm Science, the Forensic Study of Alarm Systems, is a

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While Providing Your Customers With The Most Effective And Reliable Security Systems Available, E-Book To All Of The 631 Participants At The 2015 Annual Symposium, Atlantic City, New Jersey.

- “*Recommended Book: The Alarm Science ManualTM*” Security LetterTM⁸² -A Private Monthly Letter-Plus Supplements And Data Services-On The Issues Of Corporate Planning And Protection, January, 2015, Robert McCrie, CPP, Ph.D⁸³.

Master Alarm Technician, a Certified protection professional Board Certified in Security Management, Fellow of the American Board of Forensic Engineering and Technology, a Certified Fraud Examiner, is licensed in three states as a certified Alarm Contractor, is Certified in Homeland Security, Level IV, and is a NICET Level IV Certified Senior Engineering Technician in Fire Protection Engineering Technology/Fire Alarm Systems. Mr. Zwirn has been appointed to serve on 22 Underwriters Laboratories, Inc. Standard Technical Panel (STP) Committees, was formerly appointed by the National Fire Protection Association to serve in the Special Expert Category, as Principal Technical Committee Panel Member for NFPA 72® of the National Fire Alarm Code® and for NFPA 72® of the National Fire Alarm and Signaling Code. Jeff has been personally involved in the security survey, recommendations, needs analysis, sales, design, programming, installation, service, testing, inspection, maintenance, and monitoring of more than 3,000 security system. To access your own personal copy of the Alarm Science ManualTM use the code (NJESA2015) by going to alarmexpert.com/alarmsciencemanual. Kindly note that access using this promo-code is only authorized for one download per registered attendee of the NJESA 2015 symposium and is good until March 6, 2015. For a limited time, first edition hardcover autographed and personalized copies of the Alarm Science ManualTM by Jeffrey Zwirn, are also available for purchase through the NJESA directly; at the special pricing of \$60.00, plus shipping costs of \$10.00. A portion of all proceeds made from the sales of these books will be donated to the NJESA Youth Scholarship Program. We truly hope you enjoy the Symposium and your complimentary copy of the Alarm Science ManualTM.

⁸² RECOMMENDED BOOK: *THE ALARM SCIENCE MANUALTM* Alarm system planning, selection, installation, and monitoring are incompletely understood by most security practitioners. Confidence in the installer or central alarm monitoring organizations is sometimes badly placed. Jeffrey D. Zwirn has been an alarm industry expert for over four decades. His involvement began early when he configured his own alarm system before the age of 10. Zwirn went on to build a large, independent alarm box in Florida. He sold it, moved north, and has largely concentrated on alarm consulting since then. As one of the nation's leading forensic consultants on alarm standards, he has seen plenty of examples where alarms have made society safer. In this highly personal book, Zwirn shares case histories of what has gone wrong, why, and the consequences. Zwirn writes this book for alarm dealers and installers. Yet anybody who is responsible for alarm system selection and mgmt. could benefit. The writing is non-technical. Scores of full-color images make the subject matter alive. Eighteen mini-quizzes add a challenge. Some findings: Vulnerability of phone lines. The best conceived and installed alarm systems become worthless if their phone connection to the central monitoring station is cut. Surprisingly, that's easy to do. Zwirn writes: “[I]f the telephone lines are cut by the criminal prior to entering the facility (as they often are), the digital dialer will be unable to dial the central station for appropriate response.” What to do? Protect phone and meter rooms “as mission-critical areas and secure them.” Is the alarm dealer truly UL Certified? Premises liability insurance generally calls for UL-Certified security systems to be installed. However, “many alarm dealers” pass themselves off as meeting UL requirements when they do not. They may use UL-Listed equip. or state that the system will be connected to a UL-Listed central station. But that doesn't mean the dealer/installer has proper UL-Certification. Such a level of expertise requires a thorough understanding of UL Standards, specific manufacturer's specs, and the ability to install systems and pass a UL evaluation. Central station services are governed by UL 827 standard. The author writes” “Fewer than 25% of all monitoring facilities are said to have been granted UL approval under section UL 827.” Protecting Safes. Electronic vibration detection (EVD), or an equivalent form of safe protection, is necessary to protect safes. This is in addition to other alarm features to protect a space here safes are installed. Such security measures are only taken following a security survey-an exhaustive search of all risks and vulnerabilities of a premise. A special offer. We've never read a book on alarms so engaging. And the topic is consequential. www.alarmexpert.com 339 pp.; numerous colored images.

⁸³ Robert McCrie began his career in protection as a security guard in his home town of Toledo, Ohio. Upon graduating with a bachelor's degree, he began his teaching career in biology at the University of Toledo. He subsequently conducted research and studied in the US and Denmark. He next became an advertising copywriter on scientific and consumer accounts at a series of New York City advertising agencies. In 1970, he left advertising and started a newsletter concerned with protection of assets from loss. The next year he began consulting in a wide variety of issues concerning security. In the 1970's McCrie joined the

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- Book Signing at The International Security Conference & Exposition (ISC West), Sponsored by Rapid Response Monitoring, Las Vegas, Nevada, April 14th-17th, 2015. *The Alarm Science ManualTM: Scientific Advice And Advanced Methodologies To Help Your Company Minimize Liability Now While Providing Your Customers With The Most Effective And Reliable Security Systems Available.*
- *It's No Secret: Bush Incident Shows Secret Service Needs To Brush Up on Security Basics*, Authored by Jeffrey D. Zwirn, Security Sales & Integration Magazine, April 2015.
- *The Secret Service Could Learn From Alarm And Security Professionals*, Authored by Jeffrey D. Zwirn, Security Sales & Integration Magazine, October 2014.
- *The Alarm Science Manual: Scientific Advice And Advanced Methodologies To Help Your Company Minimize Liability Now While Providing Your Customers With The Most Effective And Reliable Security Systems Available⁸⁴*, Authored By Jeffrey D. Zwirn, CPP, CFPS, CFE, DABFET, CHS-III, SET, President, IDS Research & Development, Incorporated, August 2014. Peer reviewed by Lessing (Les) Gold, Partner, Mitchell Silberberg & Knupp⁸⁵; Keith Jentoft, President, RSI Video Technologies, Inc.⁸⁶; Professor Robert McCrie,

advisory board of John Jay's Security Management Institute. In the following years, he became more involved at John Jay planning programs, lecturing, and aiding students. In 1986, McCrie joined the faculty on a tenure-track line, eventually reaching full professor and serving as chair (1997-2003). En route he obtained a doctorate in urban history under Richard C. Wade. McCrie has written and edited widely in the field, including Security Operations Management, published by Butterworth-Heinemann. Professor McCrie founded the B.S. in Security Management major and has coordinated the M.S. in Protection Management degree at John Jay College of Criminal Justice. Mr. McCrie also edits Security Letter and was the founding editor-in-chief of Security Journal. His awards include the President's Award of Merit from the American Society for Industrial Security and the Breslin award from the International Security Management Association. In recent years, he has become committed to the radical reform of prisons in the US and other countries.

⁸⁴ The Alarm Science ManualTM is available for sale through the Security Industry Association (SIA) Book Store and others.

⁸⁵ The Alarm Science ManualTM Jeff Zwirn has made the security industry more observant and responsive. During the years I have represented the industry it has gone through a very significant evolution. When I first represented the industry, there was little if any regulation or oversight. Technology was years behind in innovation and communication. Security companies were fortunate in what they were able to include within their contracts, i.e., language, which under most circumstances protected them from liability. As the industry joined the computer age and technology became a part of the industry, legal challenges became more prevalent. Security companies were required to assess the risk and recommend appropriate security coverage for each individual installation. This gave rise to a new industry, "expert evaluation of the risk." Security companies were not required to make certain not only that the security they recommended was appropriate, but that it was properly installed, services and maintained. Then emerged Jeff Zwirn. A number of expert witness, knowledgeable in the industry preceded Jeff, but none who possessed his technical and engineering skill and prowess. He has become the leading expert witness in the field and has positively impacted the industry on the importance of doing it right. Jeff is widely relied upon by the security industry in determining the proper installation, maintenance and use of security systems. Plaintiffs and defendants race to call Jeff to make sure they get to him first. Lessing (Les) Gold, Partner, Mitchell Silberberg & Knupp, *Recipient of the George R. Lippert Memorial Award from the Security Industry Association for exemplary service to the security industry, inducted into the SSI Hall of Fame for distinguished industry service to the electronic security industry, recipient of Lifetime Achievement Award from the California Alarm Association for service to the security industry, AV® PreeminentTM Rating, Martindale-Hubbell, formation of several major security alarm and integration companies, lead counsel in acquisition of one of the largest security alarm companies in the United States, authored California alarm licensing law, worked with many municipalities and states to develop licensing and standards, and served as counsel to many buyers and sellers in some of the largest and smallest acquisitions in the security-related industries.*

⁸⁶ Jeffrey Zwirn's book is unique and necessary – necessary for leaders and owners in the industry. In terms of maximizing company value and minimizing threats to the owner, this book should be required reading for every manager of design/installation – and suggested reading for everybody else. The book is unique in that it goes beyond the obvious, beyond the sales pitch, even beyond the technology and brings the reader face to face with the consequences of poor decisions (loss, deaths, and lawsuits). What was promised, what was installed, what are the results and ultimately landing in what happens next.... As Jeffrey explains, too often there is a very expensive lawsuit where science proves to the courts that promises were indeed broken, installations were defective, and the results were catastrophic to the customer. But, this book is not simply a collection of horror stories; it is eminently practical. It outlines a way of thinking, a way of acting and a way of doing business.

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CPP, Ph.D, Professor At John Jay College of Criminal Justice⁸⁷; Ralph Wayne Sevinor, President, Wayne Alarm Systems, Inc.⁸⁸; Daniel B. Kennedy, Ph.D, CPP, Consulting Forensic Criminologist And Professor

A scientific professional approach unfolds through the pages that can be understood and absorbed into practice. Stronger alarm design and stronger alarm installations are the natural result of embracing Jeffrey's ideas. Keith Jentoft, President RSI Video Technologies, Inc., Videofied is the world leader in video intrusion alarm systems with an installed base of hundreds of thousands of systems in over 35 countries. Videofied delivers priority police response for greater security and reduced losses. *Videofied is the leading solution to fight copper theft. The products are wireless, cordless and can operate both indoors and in harsh outdoor environments. The alarm systems are effective enough to protect the critical infrastructure of the USA (over 60 utilities use Videofied to protect their substations from copper theft) and affordable enough for the residential consumer. Mr. Jencroft is the holder of 12 Patents in several fields.*

⁸⁷ Alarm system planning, selection, installation, and monitoring are completely understood by most security practitioners. Confidence in the installer or central alarm monitoring organizations is sometimes badly placed.

Jeffrey D. Zwirn has been an alarm industry expert for over four decades. His involvement began early when he configured his own alarm system before the age of 10. Zwirn went on to build a large, independent alarm biz in Florida. He sold it, moved north, and has largely concentrated on alarm consulting since then. As one of the nation's leading forensic consultants on alarm standards, he has seen plenty of examples where alarms have made society safer. In this highly personal book, Zwirn shares case histories of what has gone wrong, why, and the consequences. Zwirn writes this book for alarm dealers and installers. Yet anybody who is responsible for alarm systems selection and management could benefit. The Writing is non-technical. Scores of full-color images make the subject matter alive. Eighteen mini-quizzes add a challenge. Professor Robert McCrie, CPP, Ph.D, Professor at John Jay College of Criminal Justice, *Robert McCrie began his career in protection as a security guard in his home town of Toledo, Ohio. Upon graduating with a bachelor's degree, he began his teaching career in biology at the University of Toledo. He subsequently conducted research and studied in the US and Denmark. He next became an advertising copywriter on scientific and consumer accounts at a series of New York City advertising agencies. In 1970, he left advertising and started a newsletter concerned with protection of assets from loss. The next year he began consulting in a wide variety of issues concerning security. In the 1970's McCrie joined the advisory board of John Jay's Security Management Institute. In the following years, he became more involved at John Jay planning programs, lecturing, and aiding students. In 1986, McCrie joined the faculty on a tenure-track line, eventually reaching full professor and serving as chair (1997-2003). En route he obtained a doctorate in urban history under Richard C. Wade. McCrie has written and edited widely in the field, including Security Operations Management, published by Butterworth-Heinemann. Professor McCrie founded the B.S. in Security Management major and has coordinated the M.S. in Protection Management degree at John Jay College of Criminal Justice. Mr. McCrie also edits Security Letter and was the founding editor-in-chief of Security Journal. His awards include the President's Award of Merit from the American Society for Industrial Security and the Breslin award from the International Security Management Association. In recent years, he has become committed to the radical reform of prisons in the US and other countries.*

⁸⁸ Few people have had as much expertise in forensically investigating electronic security and fire alarm systems as nationally recognized alarm expert and industry veteran Jeffrey D. Zwirn, CPP, CFPS, CFE, DABFET, CHS-III, SET, CCI, and President of Zwirn Corporation. At the age of nine, Zwirn built his first alarm system. For the next forty plus years, Zwirn has been immersed in all aspects of owning and operating an alarm contracting practice including performing security surveys and needs analysis, providing recommendations, as well as the sales, design, installation, programming, inspection, service, repair, maintenance, testing, and monitoring of thousands of security and alarm systems. In addition to being designated and recognized by the New York City Police Department (NYPD) as an expert instructor, Zwirn has been retained to investigate a multitude of cases and claims involving electronic security systems, from burglary and fire losses to events where security systems have stood as silent witnesses to catastrophic crimes, such as arson, fraud, rape, and murder. Zwirn's highly specialized skills are further amplified through the crucial application of his education, skill, knowledge, training, experience, and credentials in the alarm and security industry. To that end, Zwirn has educated and taught juries and the technical community of the alarm, security, and law enforcement industries across the country, about all of this mission-critical information, and his forensic methodologies. By employing a combination of reliable scientific and technical formulas, Zwirn is able to uncover the reasons why a system is alleged to have failed, did not fail, was circumvented, or bypassed by an intruder, or otherwise what, if any, impact his forensic investigative analysis and findings bring to the case. One measure used to quantify Zwirn's unparalleled expertise in forensic alarm investigations is that he has been retained by some of the world's largest alarm companies and manufacturers as their expert. In just one example, the reliability of Zwirn's forensic expertise was a contributing factor in securing a defense verdict in a plaintiff's \$90 million fire loss claim against a nationally recognized alarm company. Conversely, Zwirn has also been retained as the plaintiff's alarm expert. In fact, in the first seven months of

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Emeritus, Criminal Justice And Security Administration, University Of Detroit Mercy⁸⁹; Ron Davis, Davis Mergers And Acquisitions Group, Inc.⁹⁰; Dale R. Eller, Owner/Executive Director, ITZ Solutions⁹¹, Michael J.

2010 alone, Zwirn's testimony was a contributing factor in jury awards and verdicts in excess of millions of dollars. Zwirn is also nationally known for the groundbreaking scientific and technical forensic investigation that he performed, and testified to, in the first degree murder retrial case of the State of Missouri versus George Revelle. During the deliberations, the jury stated that they believed that Revelle killed his wife. However, after hearing Zwirn testify for the defense, the jury came back with a not guilty verdict. In particular, not only did the jury state that Zwirn was a reliable witness, but also the jury unilaterally relied on Zwirn's expertise and testimony to reach its not guilty verdict. Zwirn has also been selected to provide test questions for the internationally recognized Certified Protection Professional® credential and for each level of the National Institute for Certification in Engineering Technologies Fire Alarm Systems Certification Program (NICET®). Zwirn was also appointed as a principal technical committee panel member for NFPA 72®, the National Fire Alarm Code® and for the National Fire Alarm and Signaling Code®, in the special expert category, and he currently serves on twenty-two UL® Standards Technical Panels. Ralph Wayne Sevinor, President, Wayne Alarm Systems, Inc., Lynn, Massachusetts. *Well-known internationally in the security industry, he is an active and influential member of several trade associations, including past president of Central Station Alarm Association. An industry historian, he has over 30 years of experience in the electronic detection field and has created an Alarm Industry Museum in his offices to preserve and promote the alarm industry artifacts and history.*

⁸⁹ At last, a book about an important subject that the nontechnical among us can read and understand. Although those of us in the safety and security professions are fully aware of the importance of intrusion detection systems and fire alarms, rarely can we find a book on the subject that is both highly informative and yet very readable, or "user friendly". The book's author is Jeffrey D. Zwirn, a nationally known alarm specialist with extensive history in all aspects of alarm development, operations, installation, and monitoring. Zwirn holds multiple, respected certifications such as CPP, CFE, CFPS, and a host of others. Zwirn is also a master alarm technician and is a burglar and fire alarm certified contractor in Florida, New York, and New Jersey. Not only is he a master of his trade, Zwirn also has wide-ranging experience as a forensic consultant who has served as an expert witness in various courts across the country. In addition, he has produced training curricula for the New York City Police Department (NYPD) and the Joint Terrorism Task Force, among others. The Alarm Science Manual is divided into seven information-filled chapters. Chapter 1 introduces the reader to alarm basics while Chapter 2 delves into specific technologies, features, and devices. Chapter 3 focuses on fire protection in a particular while Chapter 4 discusses best practices in the industry. Chapter 5 includes case histories detailing the human tragedies that have occurred due to a variety of technical and human errors. Chapter 6 appropriately details the liability consequences of failing to follow acceptable alarm practices. Finally, Chapter 7 provides an overview of certain current issues in the industry. This book is to be commended for its authority, content, and clarity. It reminds me of the enormously popular Protection of Assets Manual in terms of its readability and focus on the most important issues concerning the alarms segment of security and safety efforts emphasized in modern societies. Daniel B. Kennedy, Ph. D, CPP *Consulting Forensic Criminologist and Professor Emeritus, Criminal Justice and Security Administration University of Detroit Mercy.*

⁹⁰ Thank you, Jeff... For a copy of your new book. It is, indeed, impressive. I have heard a great deal about your work, and am impressed by both the quality of the work that you do as well as the knowledge you possess. Your book, should be a "must read" for anyone in the alarm industry, particularly those who are managing a traditional alarm company. I have read your book in its entirety, and find the body of work to be unique, necessary and not easily duplicated. If I am ever going to be involved in litigation, I want to be prepared by having read your book, once again, ahead of time. I am most appreciative of your efforts in making this information available to the industry. If ever I can return the favor, all you ever have to do is ask. Again, congratulations on a fine work. Yours for greater success, Ron, Ron Davis, Davis Mergers and Acquisitions Group, Inc. *Founded in 1973 by Ron Davis, the Davis Group has consulted with hundreds of alarm companies, manufacturers, distributors, investors and international players looking to understand the dynamics of the American security marketplace. It's estimated that over 70% of the alarm installing companies have been reached by Davis Group through its seminars and audio tapes.*

⁹¹ Spellbinding, Mesmerizing, Captivating. Having been in the electronic life safety and security industry for thirty-plus years, I can count on one hand the number of speakers who I would describe with these terms. . . Jeffrey Zwirn is clearly one of these individuals. . . I have witnessed, firsthand, seminar session rooms overflowing with alarm company owners, managers, technicians, and salespersons hanging on every word Jeffrey spoke, and those sessions ran thirty to sixty minutes past their scheduled conclusion time due to the continuous barrage of attendee questions. A truly gifted teacher and subject matter expert, Jeffrey is one of our industry's masters who now has taken his wealth of knowledge and penned what I am sure will quickly become a must read for anyone who wants to make a living in this industry "the right way." Dale R. Eller,

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Revness, Esquire⁹²; Greg Kessinger, SET, CFPS, IMSA, CDT⁹³; Peter Lowitt, President, Lowitt Alarms & Security Systems⁹⁴; Charles G. Darsch⁹⁵, Bob Dolph⁹⁶ And Jack F. Dowling⁹⁷.

Owner/Executive Director, ITZ Solutions!

Executive Director, PBFAA, Executive Director, NYSESA Executive Director, Installation Quality Certification Program.

⁹² *The Alarm Science Manual*TM is the first of its kind in the Security Alarm Industry and a welcoming addition to any alarm dealer's "tool box." Ignore Mr. Zwirn's guidance, tips, strategies, and warnings in this industry bible at your own risk. There is a good reason he is one of the most respected and sought after alarm security experts in the United States. It would do you well to listen to him. This manual is peppered with "life safety" and "company saving" gems which, if followed, will most certainly reduce your risk of having to spend some unpleasant and unwelcome time with litigation attorneys like myself! Enjoy the read and the education—I most certainly did. Michael J. Revness, Esquire, *Legal Counsel To The New Jersey Electronic Security Association And The Pennsylvania Burglar And Fire Alarm Association.*

⁹³ As the author of the longest running magazine article on fire alarm systems in the United States, I was surprised to discover a new level of in-depth scientific and technical alarm information which has never been provided to the alarm industry before. The Alarm Science Manual does just that in going behind the scenes and forensically examining court cases where "electronic security" didn't live up to its name. I can safely bet that every alarm company owner or professional technician who reads this book will have a newly found respect for each of their duties and tasks. Whether readers dive into this text mid-stream, or start from the first chapter, all will eventually experience the author's skilled intent to ensure that the reader is provided with the awareness and importance of doing it right, or accepting the serious and negative consequences of its actions and inactions from doing it wrong. Readers will discover highly advanced methodologies from Zwirn that they can adopt and integrate into their own business model which may save their customers from loss, serious personal injury, and even death. If The Alarm Science Manual readers follow Zwirn's expert advice and guidance it could dramatically improve the way they conduct their businesses. Greg Kessinger, SET, CFPS, IMSA, CDT. *SD&I Columnist and National Training Director for Zenith Design Group, Inc.*

⁹⁴ Don't walk—RUN to get a copy of The Alarm Science Manual by Jeffrey Zwirn, CPP. If you install, service, test, inspect or monitor security systems this is a MUST READ. Learn how to minimize your liability on all types of electronic security systems, from fire and burglary to panic and carbon monoxide alarms. Mr. Zwirn's extensive experience with forensic investigations of systems that failed is critical in ensuring the same does not happen to you. Attend any of Mr. Zwirn's lectures, industry training, or license renewal courses and you will hear firsthand about systems that did not function or were circumvented, leading to catastrophic losses. Read this manual to discover why alarm systems failed and what you can do to prevent a disastrous loss for your company. Learn techniques to keep yourself out of the news media and out of the courtroom. Get The Alarm Science Manual TODAY!! Peter Lowitt, President, Lowitt Alarms & Security Systems, *Member: CSAA Board of Directors. AHJ Liaison Committee.*

⁹⁵ Security Sales & Integration Book Review-The biographical preface of Jeffrey Zwirn's highly impressive background should be an inspiration to anyone considering entering the life safety field. From a young alarm tinkerer to professional alarm installer/owner to a highly qualified industry expert, Jeffrey has written a text book that should be used by every alarm company to upgrade the training of their installers on industry best practices. It should also be read by both experienced installers and novices who intend to enter alarm industry. The hints, tips and basic alarm installing features should help make this book available at local alarm associations for purchase by their members or used as a teaching tool by associations during training sessions. An excellent resource. Charles G. Darsch, *Nonvoting Vice President and SIA Representative to the NBFAA board of directors. Ex-Officio for the Alarm Industry Research Educational Foundation (AIREF). Former President of the Security Industry Association (SIA), Former Director of Corporate Relations For System Sensor. Former Board Member of CSAA, Triton Award Winner.*

⁹⁶ In your career in the alarm industry you may have been identified by many titles such as technician, contractor, agent, dealer, integrator, etc. But have you ever been called a scientist? One dictionary defines science as "*The investigation of natural phenomena through observation, experimentation, and theoretical explanation. Science makes use of the scientific method, which includes the careful observation of natural phenomena, the formulation of a hypothesis, the conducting of one or more experiments to test the hypothesis, and the drawing of a conclusion that confirms or modifies the hypothesis.*" Further, a scientist is defined as "*a person who studies or practices any of the sciences or who uses scientific methods.*" Now before you label me as having gone off the deep end, you may find more truth to this classification of scientist than meets the eye. Let's investigate further. I had to chance to review a new and fascinating book called *The Alarm Science Manual*. The author is Jeffrey D. Zwirn, CPP, CFPS, CFE, DABFET, CHS-IV, SET, CCI, and president of Zwirn Corp. — you may also know the

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name from his monthly Security Science quiz and forensic tips in *SSI* (see page 80). Zwirn has been involved in the security industry for more than 30 years, achieved numerous credentials, and is highly respected for his industry and technology knowledge. In discussing his book, which delves into its share of alarm-related catastrophes, Zwirn noted, "Clearly, there is no right way to do [alarm contracting] wrong. Unfortunately, about 80% of what I investigate contains defects and irregularities, which puts a black eye on the industry, and those of us who know how to professionally perform alarm contracting." One of the areas for which I know Zwirn best is his experience as an expert witness in many landmark security industry-related court cases. Culling from his years of wide-ranging experience and knowledge of the alarm industry make Zwirn's book a must read for alarm company owners, executives and sales/technical/operations staff. This book should quickly earn a favorite and well-worn spot on any security professional's reference library shelf. Being a fellow alarm science evangelist — or alarm scientist, perhaps — I felt that this month was a good opportunity to review and emphasize some of key points from *The Alarm Science Manual*. As you all know, we live and work in a very litigious society; working in the security industry and providing daily life-safety services underscores the extra concern for risks of liability and litigation. I would encourage management who read this book to share the many rich, true-life stories Zwirn reveals with all their employees, especially technical and sales staff. The big question is, will you become an alarm science evangelist? Zwirn starts out by offering a specific definition to alarm science, as he describes, "Reliable methodologies of how alarm systems are properly designed, applied, installed, programmed, serviced, maintained, tested, inspected, and monitored utilizing a scientific and technical level of performance-based standards and countermeasures." I've talked plenty before about the seriousness of bad installations. It's always a challenge of any service business to perform the best work possible and still stay competitive. It can be an easy sales argument that life-safety systems should be as accurate and reliable as possible. Every sales-person should carry pictures of the solid work their staff does versus some of the work of other companies. If you are looking for some good examples of poor workmanship, Zwirn's book is filled with them and in vivid color. How much time do you as a manager and owner take to emphasize proper training, methodology, and supervision of staff? *The Alarm Science Manual* also includes 25 principles of alarm science, identifying serious defects and irregularities in alarm systems. In the online version of Tech Talk (go to securitysales.com/topic/category/blogs) I will highlight and comment on a few of my favorites. *Bob is currently a Security Sales & Integration "Tech Talk" columnist and a contributing technical writer. Bob installed his first DIY home intercom system at the age of 13, and formally started his technology career as a Navy communication electronics technician during the Vietnam War. He then attended the Milwaukee School of Engineering and went on to complete a Security Management program at Milwaukee Area Technical College. Since 1976, Bob has served in a variety of technical, training and project management positions with organizations such as ADT, Rollins, National Guardian, Lockheed Martin, American Alarm Supply, Sonitrol and Ingersoll Rand. Early in his career, Bob started and operated his own alarm dealership. He has also served as treasurer of the Wisconsin Burglar and Fire Alarm Association and on Security Industry Association (SIA) standards committees. Bob also provides media and training consulting to the security industry.*

⁹⁷ Security Management-A Publication Of ASIS International-BOOK REVIEW: THE ALARM SCIENCE MANUAL-This book details the full lifetime of author Jeffrey Zwirn's fascination with alarms. From his initial interest and early experimentation with alarm systems as a youngster in his home to his dedicated career in the alarm industry, he presents a complete and comprehensive study of the alarm industry and the various types of alarms, such as intrusion, panic, fire, and more. The first chapter discusses the basic components of alarm systems: control panel, detection devices, and annunciators. This section also covers the methods of attacks on alarm systems, testing and maintenance procedures, and alarm monitoring options. The risk of liability for alarm companies is explained and supported with case studies throughout the text. The author uses his knowledge as a court-qualified expert witness to emphasize the civil liability potential for negligent actions or inactions by alarm companies. Some of these have resulted in multimillion dollar settlements and judgments against the industry. According to the author, one area of concern is the "stay" or "shunt" mode for alarm systems and the need to fully explain this function to the customer prior to programming this feature into the system. The author repeatedly stresses the importance of a reliable alarm system that is designed, installed, tested, and maintained to ensure that the system functions properly. This includes the duties of the alarm contractor to meet applicable standards published by Underwriters Laboratories Incorporated (UL) and the National Fire Protection Association (NFPA). Zwirn discusses false alarms, one of the well-known issues that plague the alarm industry, and the author concedes that only the alarm industry can solve this problem through technology and coordination with the law enforcement community. The subject matter in each chapter is followed by questions that test the reader's knowledge of the topic. The text is filled with sharp color photographs of alarm systems and components to assist the reader in understanding the written material. Although there is no word index at the end of the book, the table of contents at the beginning basically fulfills this need. A two-page list of resources at the end of the text enables the reader to learn more about alarm systems. This book—especially the liability sections—would serve any security administrator responsible for implementing alarm systems and should be mandatory reading for those in the alarm industry. *Jack F. Dowling, CPP, PSP, is president of JD Security Consultants, LLC. He teaches in the College of Criminal Justice and Security at the*

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- *Video Verification-Reducing Contractor Risk And Mitigating Lawsuits*” White Paper, By Jeffrey D. Zwirn, July 2014. Provided To The Technical Community Of The Alarm, Central Station, Security And Law Enforcement Communities And Videofied, The Equipment Manufacturer Of A Nationally Recognized Video Verification Product Which Is Installed And Central Station Monitored Throughout The United States And Internationally.
- “Officer Down: False Dispatch Leads to Shot Fired”, By Rodney Bosch And Jeffrey Zwirn, Security Sales & Integration Magazine, March 2014.
- Interviewed By Jack Leonard And Paul Pringle, “Work at Ridley-Thomas’s Residence Went Beyond Security System”, Los Angeles Times, January 2014.
- “*Company’s Carelessness Costs Customer Her Life*”, By Rodney Bosch And Jeffrey Zwirn, Security Sales & Integration Magazine, March 2013.
- Monthly Technical Contributor And Writer In *Security Science* For The Nationally Recognized Security Sales And Integration Magazine.
- Interviewed By Tess Nacelewicz, Managing Editor, *Talking Best Practices*, 2012 Electronic Security Expo (ESX)-Tune Into the Future, Nashville, Tennessee, June 2012.
- Inventor Of Secure Your Alarm Science™ IQ Cards Which Were Distributed To All Electronic Security Alarm Associations By The Electronic Security Alarm Association And All Central Station Alarm Association Board Members By The CSAA At The ESX Expo In Nashville, Tennessee.
- “*Monitoring Missteps Cost Provider 8.6M*”, By Rodney Bosch And Jeffrey Zwirn, Security Sales & Integration Magazine, March 2012.
- *Security Sales & Integration Magazine, Security Speaking Podcast*, Interviewed By Scott Goldfine, Security Sales & Integration Magazine, January 2012.
- “*Can Your Company Afford A \$2.5M Judgment?*”, By Scott Goldfine And Jeffrey Zwirn, Security Sales & Integration Magazine, March 2011.
- “*4.6M Wrongful Death Settlement Puts Focus On Industry Best Practices*”, Interviewed By Security Sales & Integration, February 2011.
- Interviewed By The College Foundation Of North Carolina, Career Planning, *Insider Info: Alarm Technician: What They Do*.
- Interviewed By The College In Colorado, Career Planning, *Insider Info: Alarm Technician: What To Learn*.
- “*Safe Heist: Highlight Combination Of Errors*”, Security Sales & Integration Magazine, March 2010.
- “*Central Stations Can Do More In An Emergency*”, Central Station Alarm Association Dispatch, Winter 2010.

University of Phoenix. He is a member of the ASIS Commercial Real Estate Council and serves on various committees of the ASIS Commission on Standards and Guidelines.

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- *"Residential Fire Leaves Burning Questions"*, Pending Litigation Is Underway After Two Firefighters And Two Residents Lost Their Lives In A Residential House Fire. A Miscommunication By A Fire Alarm Operator Appears To Have Started A Devastating Domino Effect Of Destruction. Alarm Companies Can Learn A Great Deal For The Situation To Prevent Similar Tragedies, Interviewed By Security Sales & Integration, Bobit Publishing, October 2008.
- *"Minimizing Your Loss Potential"*, Security Sales & Integration, October 2008.
- *"Let's Do Battle For Better Product Quality Control"*, Security Science: Expert Insight Into The Latest Forensic Alarm Science, Regularly Featured Contributing Technical Writer, Security Sales & Integration Magazine, October, 2008.
- *"Security Company Sued Over Theft"*, The Herald News, September 12th, 2008.
- *"Alarm On Woman's Jewelry Closet Installed Wrong, Expert Testifies"*, The Bergen Record, September 15th, 2008.
- *"Expert Says Botched Job On Alarm Led To \$1M Theft"*, The Bergen Record, September 16th, 2008.
- *"So Much To Lose,"* Security Science: Expert Insight Into The Latest Forensic Alarm Science, Regularly Featured Contributing Technical Writer, Security Sales & Integration Magazine, September 2008.
- Interviewed By Jill Scott, Reporter, *Tips On How To Arm Your House Against Holiday Break-Ins*, NY1 News, NY1.Com New York, New York, August 19th, 2008.
- Interviewed By Jill Scott, Reporter, *Be Secure When Choosing An Alarm*, R News, Rochester, New York, Aired August 2nd, 2008.
- Interviewed By Jill Scott, Reporter, *Tips On How To Arm Your House Against Holiday Break-Ins*, News 10 Now, Syracuse, New York, Aired July 13th, 2008.
- Interviewed By Jill Scott, Reporter, *Tips On How To Arm Your House Against Holiday Break-Ins*, Capital News 9, Albany, New York, Aired July 13th, 2008.
- Interviewed By Jill Scott, Reporter, *Tips On How To Arm Your House Against Holiday Break-Ins*, CNN Headline News, Aired July 3rd, 2008.
- Interviewed By Jill Scott, Reporter, *Tips On How To Arm Your House Against Holiday Break-Ins*, NY1 News, New York, New York, Aired July 1st, 2008.
- *"Camp Fire Toasts Installer,"* Security Sales & Integration Magazine, May 2008.
- *"Burglary Goes Down Unhampered"*, Alarm Expert Jeffrey D. Zwirn, Security Dealer & Integrator Magazine, March 2008.
- *"Hoodwinking The Hoodlum"*, Security Science: Expert Insight Into The Latest Forensic Alarm Science, Regularly Featured Contributing Technical Writer, Security Sales & Integration Magazine March 2008.
- Interviewed By Matt Meagher, Senior Correspondent, Inside Edition, *House Alarm Investigation*, Aired February 18th, 2008.
- *"Critical Carbon Monoxide Detection," NFPA Journal, Fire Science And Technology Educators*, January February 2008, National Fire Protection Association International.
- *"What's In Your Subscriber Files?"* Alarm Science, Regularly Featured Columnist, Security Products & Technology News, December 2007.
- Interviewed By Maria Durant, Reporter, *Flaws In Alarm Systems Intruders Already Know About*, FOX56, Kentucky, Aired November 26th, 2007.
- Interviewed By Maria Durant, Reporter, *Expert Says A Reliable Alarm System Critical For Home Security*, ABC6/FOX28 Ohio, Aired November 1st, 2007.

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- "Provide Clients Added Value", Alarm Science, Regularly Featured Columnist, Security Products & Technology News, October 2007.
- "Don't Be Alarmed: BE PREPARED", Cepro, October 2007.
- Interviewed By The Bergen Record, "Home, Secure Home", September 2007.
- Interviewed By Jewish Standard, Jewish Community News, Rockland Jewish Reporter, "The Keys To Protecting Your Home", Fall 2007.
- "Fire Alarm Reset Switch, Scientifically Safe Or Tantamount To Danger", Alarm Science, Regularly Featured Columnist, Security Products & Technology News, September 2007.
- "Stay Shunting Dangers...", The Bellringer, Pennsylvania Burglar And Fire Alarm Association, September 2007.
- "Open The Window To Alarm Screens, System Can Be Ineffective If Not Properly Configured", Alarm Science, Regularly Featured Columnist, Security Products & Technology News, August 2007.
- "Stay Shunting Dangers..." New York Security Signal, Official Publication Of The New York Burglar & Fire Alarm Association, July/August 2007.
- Interviewed By Kirstin Cole, Consumer Reporter, *Consumer Watch: Home Insecurity Expert: Alarm Companies Don't Always Fortify Your Home*, CBS2, Aired July 2007.
- "Be Prepared To Accept The Risks Posed By Swimming Pool Alarms", Alarm Science, Regularly Featured Columnist, Security Products & Technology News, June/July 2007.
- Interviewed By Kirstin Cole, Consumer Reporter, *CBS 2 HD Undercover: Security Lapses At NYC Hotels: You May Think You're Safe And Sound, But Are You Really?*, Aired June, 2007.
- Interviewed By Kevin D. Demarrais, Reporter, *How Reliable Are Your Security And Fire Alarm Systems?*, The Bergen Record, June 29th, 2007.
- "Telephone Tape Dialers Now Old Technology", Alarm Science, Regularly Featured Columnist, Security Products & Technology News, April, 2007.
- "Deadly Outcome Was Preventable", Alarm Science, Regularly Featured Columnist, Security Products & Technology News, March 2007.
- "Don't Let Window Contacts Expose Holes In Your Liability", Security Sales And Integration Magazine, Bobit Publishing, March 2007.
- "Residential Security Systems", Interviewed By Consumers Digest Magazine, March 2007.
- "Carbon Monoxide Detectors Are Mission-Critical In The Home", Alarm Science, Regularly Featured Columnist, Security Products & Technology News, January/February 2007.
- "Circumventing The System", Alarm Science, Regularly Featured Columnist, Security Products & Technology News, December 2006.
- "Inheriting Someone Else's Problem", Alarm Science, Regularly Featured Columnist, Security Products & Technology News, November 2006.
- "Are Your Installation Methods Rooted In Junk Science", Security Sales & Integration, Bobit Publishing, October 2006.
- "What Is Early Warning Fire Detection?" Alarm Science, Regularly Featured Columnist, Security Products & Technology News, October 2006.
- Author Of 2006 Edition Of "The Alarm Connection A Practical Guide To Burglar & Fire Alarm Systems For Fire Officials, Fire Inspectors, And Authorities Having Jurisdiction."
- "Alarm Science, One Size Doesn't Fit All" Alarm Science, Regularly Featured Columnist, Security Products & Technology News, September 2006.
- "Do You Have The Science To Support Your Methodology?" Alarm Science, Regularly Featured Columnist, Security Products & Technology News, August 2006.

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- *"Where There's Smoke"* Alarm Science, Regularly Featured Columnist, Security Products & Technology News, June/July 2006.
- *"Safeguarding Your Subscribers"* Alarm Science, Regularly Featured Columnist, Security Products & Technology News, May 2006.
- *"Unveiling The Mother Of All Inventions"* Alarm Science, Regularly Featured Columnist, Security Products & Technology News, April 2006.
- *"Beware Of Ebay"* Alarm Science, Regularly Featured Columnist, Security Products & Technology News, March 2006.
- *"Preparing Your Customer For An Ambush"* Alarm Science, Regularly Featured Columnist, Security Products & Technology News, January/February 2006.
- *"In Security We Trust"* Alarm Science, Regularly Featured Columnist, Security Products & Technology News, December 2005.
- *"To Shunt Or Not To Shunt...That Is The Question"* Alarm Science, Regularly Featured Columnist, Security Products & Technology News, November 2005.
- *"False Sense Of Security"* Alarm Science, Regularly Featured Columnist, Security Products & Technology News, October 2005.
- *"Central Station Liability And Ways To Minimize It"*, CSAA Dispatch, Central Station Alarm Association, Fall 2005.
- *"Cleaning Up The Mess"* Alarm Science, Regularly Featured Columnist, Security Products & Technology News, September 2005.
- *"Central Station Liability And Ways To Minimize It"*, CSAA Dispatch, Central Station Alarm Association, Summer 2005.
- *"Editor's Angle 'Knowledge Is Powerful'"* Security Distributing And Marketing Magazine, June 2005.
- *"EOL Resistors Must Be Installed Correctly"*, Quoted In, Bosch Security Systems News And Information, March 2005, Volume 1 Issue 28.
- *"False Sense Of Security Results In Murder"*, The Consequences Of Incorrectly Installing And Servicing An Alarm System Were Severe For One Alarm Company's Customer. A Mother Of Two Who Thought She Was Protected Was Strangled To Death By An Intruder In Her Home After Her Alarm System Failed To Function Correctly. This Case Serves As A Pivotal Reminder As To The Importance Of Installation And Service Diligence, Interviewed By Security Sales & Integration, Bobit Publishing, March, 2005.
- *"The Alarm Connection A Practical Guide To Burglar & Fire Alarm Systems For Law Enforcement And Security Professionals"* Utilized As Course Curriculum For The New York City Police Department Crime Prevention Training Basic Methods Of Security Course And Manual, May, 2004.
- *"Mission Critical-Protect Your Telephone Lines"*, The Sentinel, Your Guide To Better Security, Summer 2004.
- *"Bad Installations Are No Laughing Matter"*, Sloppy Work Is A Detriment In Any Profession, But It Is Particularly Destructive For The Electronic Security Industry. Defying The Conventions Of Generally Accepted Practices And Standards Is Dangerous And Damaging To Customers, The Offending Business And The Entire Industry. Examining These Slipshod Installations Is Helpful In Eliminating Such Undesirable Elements, Interviewed By Security Sales & Integration, Bobit Publishing, August, 2003 Issue.
- *"Alarm Design That Rings True"*, Security Management Magazine, American Society For Industrial Security, April 2003.
- *"Contracts Clear Alarm Company Of Liability In \$100M Suit,"* Security Company Accused Of Negligence Proves Its Duty And Responsibility Under Contract Did Not Include Servicing A Sprinkler System At Pennsylvania Storage Facility Destroyed By Fire, Interviewed By Security Sales & Integration, Bobit Publishing, March, 2003.

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- “*Learning The Hard Way*”, An Alarm Company In Central Florida Must Pay \$26.9 Million In Damages To A Former Bank Teller Who Was Paralyzed In A Botched Bank Robbery. The Plaintiff’s Expert Witness And Attorney Successfully Argued In Court That The Security System Was Defective”, Interviewed By Security Sales & Integration, Bobit Publishing, August 2002.
- “*Fire System Passes Test Lives Saved In Dorm Blaze . . . University Fire System Takes The Heat*, Forensic Alarm Expert’s Investigation Triggers Upgrading Of University Of Rio Grande (Ohio) Fire System, Interviewed By Security Sales & Integration, Bobit Publishing, May 2002.
- Author Of 2002 Edition Of “*The Alarm Connection A Practical Guide To Burglar & Fire Alarm Systems For Insurance Professionals.*”
- Author Of 2002 Edition Of “*The Alarm Connection A Practical Guide To Burglar & Fire Alarm Systems For Law Enforcement Professionals.*”
- “*Fraud Detection: Better Methods Are Needed For Purchasers Of Alarm Accounts*”, Security Systems News, March 2002.
- Alarm Systems Manual New York City Police Department, Crime Prevention Division, February 2002.
- Interviewed By Security Sales & Integration Magazine “*The New Life/Safety*” January 2002.
- Author Of 2001 Edition Of “*The Alarm Connection A Practical Guide To Burglar & Fire Alarm Systems For Insurance Professionals.*”
- “*Silent Witness*” Published In Subrogator, November 2000.
- Interviewed By Security Magazine “*Integration’s Planning Effort Is Essential.*”
- Interviewed By Security Line “*Industry Profile*” July 2000.
- Interviewed By Security Sales Magazine “*Alarm Expert Stymies State In Missouri Murder Trial*” February 1999.
- Publisher And Creator Of “*Sherman The Loudmouth*” A Coloring Book Which Teaches Children About Burglar And Fire Alarms Systems In A Non-Threatening Way, 1999.
- Author Of 1999 Edition Of *The Alarm Connection: A Practical Guide To Burglar And Fire Alarm Systems For Insurance Professionals.*”
- Contributor To The Security Business Practices Reference Book Published By The American Society For Industrial Security, 1999.
- Interviewed By Security Magazine, A Guide To Security Consultants And System Integrators And Consultants, “*Specialists Hit The Mark*”, October 1998.
- Contributor To The Security Business Practices Reference Book Published By The American Society For Industrial Security, December 1998.
- “*To Be Or Not To Be UL Listed*” Security Sales Magazine, Bobit Publishing, August 1998.
- “*Help Lower Your Loss Potential By Properly Inspecting And Testing Fire Alarm Systems*”, Security System News, July 1998.
- Author Of 1998 Edition Of “*The Alarm Connection: A Practical Guide To Burglar And Fire Alarm Systems For Insurance Professionals.*”
- Contributor To The Security Business Practices Reference Book Published By The American Society For Industrial Security, December 1997.
- Interviewed By Security Magazine, “*Identifying Risks...Burglar And Fire Alarm Services*”, Security Magazine, Guide To Security Consultants, 1997.
- “*For Whom The Bell Tolls*”, Security Management Magazine, American Society For Industrial Security, November 1997.
- “*Fine-Tuned Contracts Help Grow, Safeguard Your Company*”, Security Sales Magazine, Bobit Publishing, September 1997.

IDS Research & Development, Inc.

Security And Alarm Expert Witness And Consultation Services

Jeffrey D. Zwirn, CPP, CFPS, CFE, SET, FASI&T, CHPA- IV, NFPA 3000(PS), President

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- *"Security System Subrogation? Consider Defects, Fraud Possibilities In Losses With Burglar, Fire Alarms"*, Claims Magazine, August 1997.
- *"Extended Limited Warranty And Monitoring Agreements Can Make Your Company Money"*, The AFY Advantage, March 1997.
- *"Alarm Quiz"*, The AFY Advantage, September 1996.
- *"What Your Technicians Write Down On Your Service Tickets...Can Be Hazardous To Your Company's Wealth!"*, The AFY Advantage, May 1996.
- *"You Get What Your Pay For"*, The AFY Advantage, February 1996.
- *"Certify Your Insured's Alarm Is UL Certified"*, Best Review, A.M. Best, May 1995.
- *"Use An Expert Witness As A Money Savings Tool"*, Security Sales Magazine, Bobit Publishing, March 1994.
- *"An Eye For Detail Gives You The Edge"*, Security Concepts, Terra Publishing, October 1994.
- *"Dealer's Boyhood Security Dreams Are Fulfilled"*, Security Sales, 1994.
- *"Kinks And Hints"*, Contributor, Security Distributing And Marketing (SDM) Magazine, 1987.

AWARDS:

New Jersey Electronic Life Safety Association Member Of The Month, June 2021.

Recipient Of The 2019 Outstanding Service Award By The New Jersey Electronic Security Association, Presented On Their Fiftieth Anniversary Celebration.

Recipient Of The 2018 True Professional Award By The New Jersey Electronic Association. Presented AT The NJESA 2019 Annual Symposium

COLLEGE AND UNIVERSITY PROFESSOR RECOGNITION:

College and University Professors recognize Mr. Zwirn as a Qualified Forensic Alarm and Security Expert and have invited him to teach their undergraduate and/or graduate students and/or these Professors have worked with Mr. Zwirn on other Forensic Cases and/or Investigations across the county.

- **Professor Robert McCrie, CPP, B.S. M.A. M.S. Ph.D.**, Professor at John Jay College of Criminal Justice has had Mr. Zwirn teach courses at John Jay and is a peer reviewer for the Alarm Science Manual. TM Robert McCrie began his career in protection as a security guard in his home town of Toledo, Ohio. Upon graduating with a bachelor's degree, he began his teaching career in biology at the University of Toledo. He subsequently conducted research and studied in the US and Denmark. He next became an advertising copywriter on scientific and consumer accounts at a series of New York City advertising agencies. In 1970, he left advertising and started a newsletter concerned with protection of assets from loss. The next year he began consulting in a wide variety of issues concerning security. In the 1970's McCrie joined the advisory board of John Jay's Security Management Institute. In the following years, he became more involved at

John Jay planning programs, lecturing, and aiding students. In 1986, McCrie joined the faculty on a tenure-track line, eventually reaching full professor and serving as chair (1997-2003). En-route he obtained a doctorate in urban history under Richard C. Wade. McCrie has written and edited widely in the field, including Security Operations Management, published by Butterworth-Heinemann. In recent years, he has become committed to the radical reform of prisons in the US and other countries.

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- **Professor Daniel B. Kennedy, B.A. M.A. Ph.D., CPP:** has worked with Mr. Zwirn on several forensic cases and investigations and is a peer reviewer for the Alarm Science Manual. TM Consulting Forensic Criminologist and Professor Emeritus, Criminal Justice and Security Administration, University of Detroit Mercy. Dr. Kennedy has a B.A. and M.A. in Sociology from Wayne State University in Detroit, Michigan, and a Ph.D. in Educational Sociology also from Wayne State University. Daniel B. Kennedy began his career in criminal justice and security administration as a civilian crime analyst with the Detroit Police

Department in 1966. Over the next decade, Dr. Kennedy also served as a counselor for the Federal Bureau of Prisons, as a probation officer in Detroit, and as a senior administrator of two police academies in Southeastern Michigan. Since completing his formal education, Dr. Kennedy has had extensive specialized training in various aspects of criminal behavior, policing operations, corrections operations, and private sector security management. He successfully tested for the Certified Protection Professional designation in 1983 and has been recertified every three years since. For the past several years, he has also studied terrorism, antiterrorism, and counterterrorism through participation in focused training across the U.S. and abroad. After spending a year teaching at the College of the Virgin Islands in St. Thomas, USVI, Dan returned to his hometown and accepted a faculty position at the University of Detroit in 1977. For the past thirty years, Dr. Kennedy has developed expertise in forensic criminology: the application of criminological knowledge to matters of immediate concern to various courts of law. Dan practices this specialty in three ways: academic publication, participation in litigation as an expert, and teaching. He is widely published in such journals as Journal of Police Science and Administration, Journal of Criminal Justice, Justice Quarterly, Crime and Delinquency, Professional Psychology, Journal of Social Psychology, Criminal Justice and Behavior, FBI Law Enforcement Bulletin, Police Quarterly, The Police Chief, Security Journal, Security Management, Journal of Security Administration, American Jails and a host of others.

The title of Professor Emeritus was bestowed on him in May 2008 by the President and Deans of the University of Detroit Mercy for distinguished scholarship and outstanding teaching. In further recognition of his services to the University, he was appointed Grand Marshall of the 2008 University commencement ceremony. In addition, Dr. Kennedy has been recognized as one of the "modern architects" of Forensic Criminology in the text Forensic Criminology, authored by Petherick, Turvey and Ferguson (Elsevier Press, 2010).

- **Dr. Jana Arsovska, B.A. M.A. Ph.D.** Assistant Professor, Sociology Department, John Jay College of Criminal Justice had Mr. Zwirn teach courses to her undergraduate and graduate students at John Jay. Dr. Jana Arsovska is an Associate Professor of Sociology at John Jay College of Criminal Justice and the Program of Doctoral Study in Criminal Justice at The Graduate Center, City University of New York. She is also the director of the Master of Arts Degree Program in International Crime & Justice at John Jay College. She holds PhD degree in International Criminology from Leuven University in Belgium where she studied transnational organized crime with focus on the Balkan region. Dr. Arsovska has published extensively on Balkan and Albanian organized crime, human trafficking, female offenders, and criminal mobility in scholarly journals, and is the co-editor/author of the book Restoring Justice After Large-Scale Conflict: Kosovo, Congo and the Israeli-Palestinian Case (Willan Publishing, 2008). Her most recent award-winning book Decoding Albanian Organized Crime: Culture, Politics, and Globalization (University of California Press, 2015) examines some of the most widespread myths about the so-called Albanian Mafia (Recipient of the 2015 Outstanding Book Award, DIC, ASC; 2015 Best Publication Award, IASOC;

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2016 Outstanding Book Award, IS, ACJS). Dr. Arsovska is involved in qualitative research on organized crime, and has conducted prison studies on related topics in Europe and the United States. Dr. Arsovska is the recipient of the National Institute of Justice's 2012 W.E.B. Du Bois Fellowship for research examining the relation between migration, culture and transnational organized crime. Over the years she has acted as a consultant on Albanian/Balkan organized crime for several organizations, including the World Bank, UN and DCAF. Prior to her current post, she worked for the European Forum for Restorative Justice and underwent training at INTERPOL in Lyon, France.

- **Professor Eamon P. Doherty, BS, MS, Ph.D.**, from the School of Administrative Science at Fairleigh Dickinson University has had Mr. Zwirn teach his students both at the FDU campus and through FDU's International Program. Dr. Eamon Doherty is a professor in the Petrocelli College of Continuing Studies at Fairleigh Dickinson University (FDU). He is a certified computer examiner (CCE), Certified Protection Professional (CPP), Certified Information Systems Security Professional (CISSP), and a Systems Security Certified Practitioner (SSCP). He also has certificates of attendance for classes in video forensics and cell phone forensics. Dr. Doherty is presently a member of ASIS International and the High Tech Crimes Investigative Association. Dr. Doherty presently enjoys teaching graduate and undergraduate classes on digital forensics and network security. In the past Dr. Doherty taught classes on computer telephony, Visual Basic, NET, robotics, and pc assembly language programming.
- **Norman M. Spain, J.D., CPP**, Professor & Program Coordinator Assets Protection and Security Eastern Kentucky University, College of Justice and Safety, Department of Loss Prevention and Safety. Professor Spain had Mr. Zwirn teach his undergraduate and graduate students at EKU. Dr. Norman Spain, CPP, JD, is a Professor of Criminology at Eastern Kentucky University, USA and received a Fulbright scholarship.

EDUCATION:

University School Of Nova University, Davie, Florida
North Atlantic Regional High School, Lewiston, Maine

EXPERTISE:

All Types Of Fire, Life Safety, Burglar Alarm, Security Systems And Security Management Including:

- ❖ Sonitrol Security Systems Expert
- ❖ House Arrest And Offender Management Systems For Federal, State And Local Agencies
- ❖ Hardwired And Wireless Systems
- ❖ Physical Security Evaluations, Recommendations And Countermeasures
- ❖ Crime And Loss Prevention, Crime Predictability Analysis, Crime Prevention Through Environmental Design - (CPTED)
- ❖ Court House Security
- ❖ Foreseeability Analysis And Studies, Risk Assessments, Premises Liability, Parking Lots
- ❖ Residential, Commercial And Industrial Applications And Systems
- ❖ Manufacturers, Specifications, UL Standards And Policies And Procedures
- ❖ ADA, NEC, NFPA, IFC, UFC, & BOCA Standards, Industry And Reasonable Standards
- ❖ Code And Standards Interpretation And Violations
- ❖ Nationally Recognized Industry Standards And Practices

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- ❖ Adequate Security And Contract Review
- ❖ Equipment Specifications, Ratings And Programming
- ❖ Integrated Systems
- ❖ Evaluation And Inspection, Professional Case Analysis, Plaintiff Or Defendant
- ❖ Written Reports And Expert Testimony
- ❖ Expert Evidence Reconstruction And Analysis
- ❖ Experiments, Models And Demonstrations For Trial Presentation
- ❖ Laboratory Analysis And Testing
- ❖ Internal Review Of System Programming And Event Log
- ❖ Training And Seminars
- ❖ Certified Fraud Examination And Investigation
- ❖ Fraud, Fraudulent Conduct And Indicators Of Fraud

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Some County Licenses Are In An Inactive Status

EXHIBIT E

From: NFPA Electrical <techqueselec@nfpa.org>

Sent: Tuesday, September 21, 2021 3:09 PM

To: Jeffrey Zwirn <jeffzwirn@alarmexpert.com>

Subject: NFPA Technical Question Response ref# [ref:_00D5077Vx._5001T1YrrnG:ref]



You are correct that a failure in another system connected to the fire alarm system cannot affect the function of the fire alarm system. Also, the signals from another system such as a burglar system can not take priority over the life safety signals of the fire alarm system.

Important Notice: Any opinion expressed in this correspondence is the personal opinion of the author and does not necessarily represent the official position of the NFPA or its Technical Committees. In addition, this correspondence is neither intended, nor should it be relied upon, to provide professional consultation or services.

Christopher D. Coache, Senior Electrical Engineer

If you have a follow-up question directly related to this inquiry, please reply to this email. If you have another question on either a separate topic or different document please return to the document information pages and submit your new question by clicking on the "Technical Questions" tab.

Contact: Jeffrey Zwirn
Create Date: 9/17/2021

Document Number: 72
Edition: 2019
Section: 29.10.7.5 and 29.10.7.6
Subject: Combination Listed Household Burg and Fire Control Unit
Question for NFPA:

The equipment manufacturer's specifications of this control unit require the following. The auxiliary DC power output of this control unit is intended to connect to burglar alarm initiating detection devices that require DC Power such as audio glass break detectors and motion detectors. The auxiliary DC power output of this control unit shares the same power terminals as the single data-bus circuit of the control unit.

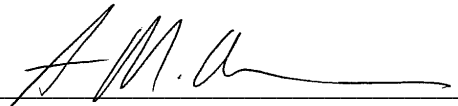
Therefore, if fire is introduced onto the auxiliary DC power output wiring of this control unit it will cause a short circuit fault condition. Since fire will melt the wiring together, the short circuit condition will be left in a sustained mode. Accordingly, its on-board PTC offers no protection. That said, when a short circuit fault condition is introduced onto the DC auxiliary power output of the control unit it will instantly shut down all zones of the fire alarm system that are connected to the zone expansion module on the system, in that each of the Zone Expansion Module are required to be connected in parallel with the single data-bus circuit of the control unit. It should also be noted that all Honeywell Zone Expansion Modules for this control unit are UL Listed to UL-1023- Household Burg and UL-985- Household Fire.

Against the foregoing backdrop, the information set forth in NFPA 72 at Sections 29.10.7.5[3] and 29.10.7.6. respectively using this control unit does not comply with NFPA 72 Standards in that a fault in the burglar alarm system will affect the operation of the fire alarm system, and equipment for other than the fire alarm system, being the burglar alarm system, that is connected to the common wiring of the system (the single data-bus) will interfere with the supervision of the fire alarm system and/or it will prevent alarm or trouble signal operation because once a short circuit condition is introduced onto the auxiliary power output of the system the zone expansion module(s) referenced above is no longer able to function since it instantly loses DC power.

EXHIBIT F

**ANALYSIS OF
THE HYPOTHESIZED DATA-BUS FAILURE MODE
OF COMBINATION-LISTED
FIRE/SECURITY CONTROL UNITS**


by



Stephen M. Olenick, MSFPE, P.E., MBA
Principal Engineer



Michael S. Klassen, Ph.D., P.E.
Principal Research Engineer



Zachary Switzer
Project Engineer

Combustion Science & Engineering, Inc.
8940 Old Annapolis Road, Suite L
Columbia, Maryland 21045

Submitted to:

Jeffrey D. Zwirn, President
CPP, CFPS, CFE, SET, FASI&T, CHPA-IV, MBAT, NFPA 3000(PS)
IDS Research & Development, Inc.
46 West Clinton Avenue
Tenafly, New Jersey 07670

July 5, 2022

ABOUT COMBUSTION SCIENCE & ENGINEERING, INC.¹

Combustion Science & Engineering, Inc. (CSE) is a company that for more than twenty years has been dedicated to the study, advancement, and application of combustion and fire sciences. Combining a wealth of knowledge and experience, from the private to public sector, from academia to industry, CSE's spirited partnership and dedicated team offers exceptional technical leadership, intelligent solutions in combustion and fire protection, and superior fire and explosion investigations. Our corporate capabilities include extensive experience in applying scientific and engineering principles to the analysis of fire and combustion.

The CSE team has advanced degrees in chemistry, chemical engineering, mechanical engineering, fire protection engineering, and aerospace engineering. CSE's main office and laboratory space is conveniently located in Columbia, Maryland, in the heart of the Washington, D.C. - Baltimore corridor. CSE's nearly 19,000 square feet of modern facilities include nearly 1,500 square feet of conditioned lab space, and around 5,000 square feet of high-bay unconditioned space.

¹ More information can be found at <https://www.csefire.com/>

This report regarding our analysis of an offered failure mode of combination-listed fire/burglar alarm control units is intended to serve as a disclosure of our findings and opinions. This analysis is based on our review to date of documents, evidence, standards, and information concerning the hypothesized failure mode. A list of the specific material reviewed to date is given as Appendix A. It is also based on our laboratory experimentation described herein.

By way of background, Mr. Olenick is a Registered Professional Engineer (P.E.) and holds Bachelors (1998) and Masters (1999) degrees in Fire Protection Engineering from the University of Maryland, College Park. He is a frequent contributor to fire science literature. He is a Principal Member of the Single-and Multiple-Station Alarms and Household Signaling Systems (SIG-HOU) Technical Committee that sets the requirements related to residential smoke and carbon monoxide alarms and fire and carbon monoxide detection systems in NFPA 72®, National Fire Alarm and Signaling Code®. He is also Chair of the new Fuel Gases Warning Equipment Technical Committee (FWE-AAA) responsible for the upcoming first version of NFPA 715, Standard for the Installation of Fuel Gases Detection and Warning Equipment. Additional information on his experience and training is provided in his Curriculum Vitae and Lists of Publications that are given as Appendix B.

Dr. Klassen holds degrees (B.S., M.S., and Ph.D.) in Mechanical Engineering from the University of Maryland and is a Registered Professional Engineer. Dr. Klassen has conducted research and published technical articles on a number of different subjects relating to fire protection, fire science, and combustion during his over 30-year career. Additional information on his experience and training is provided in his Curriculum Vitae and Lists of Publications that are given as Appendix B.

Mr. Switzer holds a Bachelor's Degree in Mechanical Engineering from the University of Maryland and is a Project Engineer with Combustion Science & Engineering, Inc. working on various consulting engineering projects over the past 5 years. He routinely participates in experimental projects and analyses related to combustion and fire science, as well as fire protection engineering. Additionally, he has participated in forensic fire investigation and reconstruction analyses. He is also responsible for UL compliance and technical development for the SafeAwake smoke alarm accessory. Additional information on his experience and training is provided in his Curriculum Vitae and Lists of Publications that are given as Appendix B.

BACKGROUND

Jeffrey Zwirn, President of IDS Research & Development, Inc. (IDS), has indicated that he has uncovered a mode of failure on combination-listed burglar and fire alarm control units that deviates from both UL and NFPA standards. Mr. Zwirn believes that this failure can render these alarm system control units non-functional without proper warning to the occupants, building owners, or the remote station. These control units are represented to be listed to UL standards, and are required to comply with NFPA 72®. Despite the listing, Mr. Zwirn has indicated that an electrical short circuit in equipment connected to the data-bus, including non-fire alarm equipment, and/or in the data-bus wiring itself, instantly renders the fire alarm system non-functional as it hinders an onsite audible alarm response to fire, and it prevents fire alarm signal(s) from being transmitted to the remote monitoring/central station.

For purposes of transparency, Mr. Zwirn was awarded a United States Patent, Protective Device for Alarm Systems Patent Number 9,965,944 BI2018, for rectifying non-conforming combination-listed fire and burglar alarm control units that he has opined do not meet both UL and NFPA standards. Having said that, Combustion Science & Engineering, Inc. (CSE) is not in any way involved in the patent, it has not tested nor evaluated the patented product, nor does it have a financial interest in this invention.

The hypothesized failure identified by Mr. Zwirn can potentially occur because of the common wiring methodology that burglar (security) and fire alarm equipment operate under with combination-listed control units, since both are required to reside on the single data-bus circuit of the control unit. Examples of equipment connected directly or indirectly to the data-bus includes system keypads, the auxiliary DC power output for burglar alarm initiating detection devices (such as motion detectors and audio glass break detectors), wireless radio receiving units, zone expansion modules and wireless radio alarm transmitters (whether they are of the dialer capture method type or of the embedded wireless radio alarm transmitter method type). The schematic for the Honeywell Vista 20P control unit can be seen in Figure 1 demonstrating the large number of devices that are intended to be connected to the data-bus wiring. The list of devices for this particular system is representative of those typically found on the market from Honeywell and a variety of other alarm equipment manufacturers. Mr. Zwirn has indicated that all of this particular

equipment is required to be connected in parallel with all of the other data-bus connected devices and/or that the combination-listed control unit uses the same terminals for its auxiliary DC power output as it does for the power required for the data-bus circuit. In fact, the positive and negative DC power for the control units' auxiliary output and power for the single data-bus wiring reside on the same terminals.

In other words, if a component on the data-bus and/or on its connected common wiring has an electrical short circuit introduced onto it, Mr. Zwirn has hypothesized that it will disable the entire data-bus including any connected keypads, the system's wireless radio receivers, the system's zone expansion modules, the wireless radio alarm transmitter, and any other non-fire related equipment connected to the common wiring of the data-bus. The electrical short circuit condition could be caused by fire burning the data-bus wiring and melting its internal conductors together due to the heat of the fire, or it could be caused by fire directly attacking any of the parallel connected devices that are required to connect to the data-bus for the system to operate properly. According to Mr. Zwirn, since both DC power and data are required to be integral to the single data-bus four (4) conductor cabling that is installed through a protected premises, a short circuit condition introduced onto the bus of the combination-listed control unit results in a catastrophic failure of the control unit.

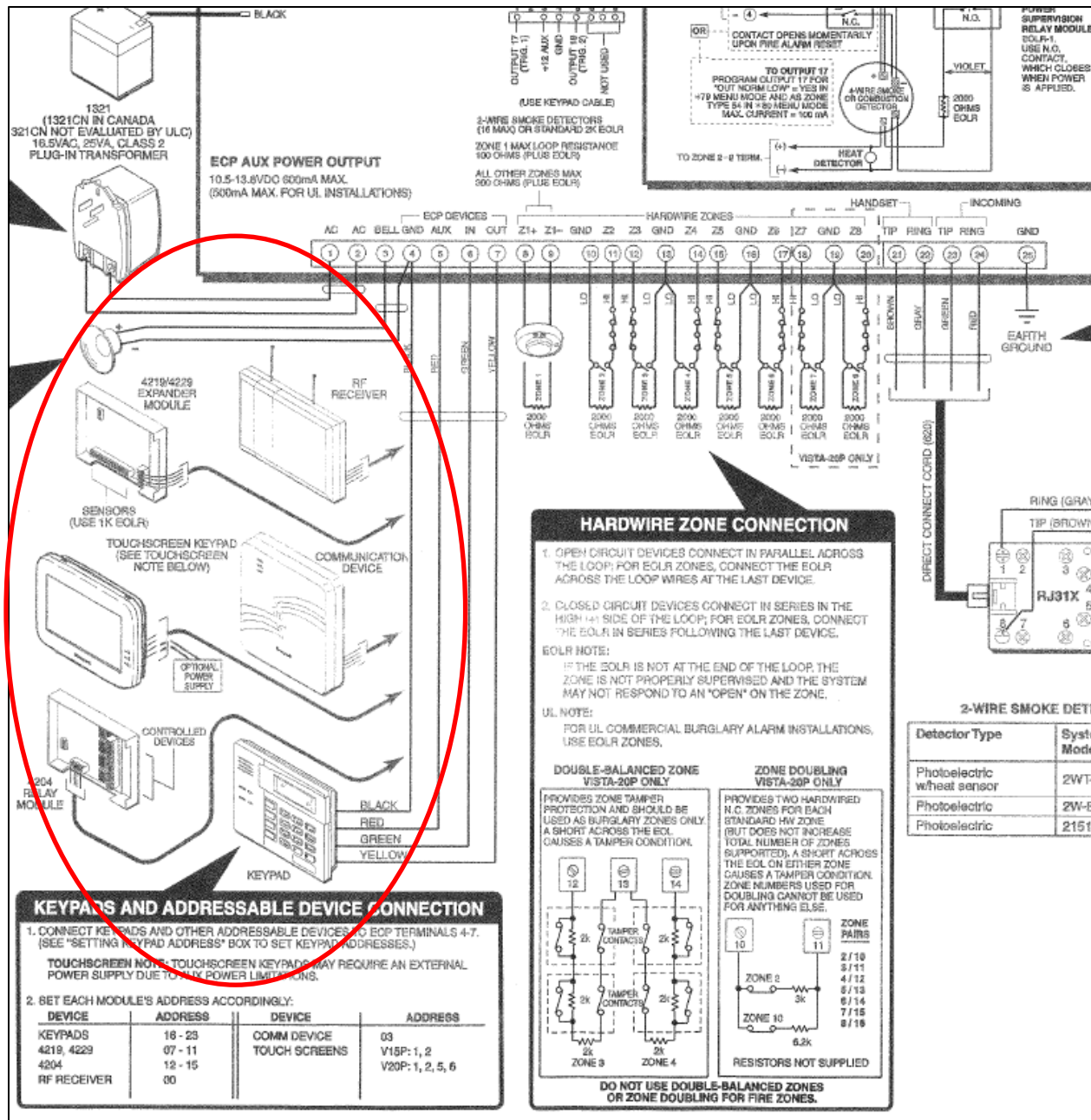


Figure 1. Honeywell Vista 20P Quick Installation Guide. Red annotation added by CSE indicating devices intended to be attached to the data-bus wiring.

As discussed above, Mr. Zwirn has opined that the disabling of the single data-bus of the control unit by a short circuit condition introduced in one of the pieces of connected equipment on its common wiring and/or in the data-bus wiring itself, manifests itself into a catastrophic failure of the control unit. Therefore, the installed equipment is no longer able to function as it is listed

and required to perform. In turn, this will cause the control unit to fail to audibly notify occupants of a fire emergency in their home or business, as well as it will fail to successfully transmit alarm signal(s) to a remote monitoring/central station for fire department notification and dispatch. Mr. Zwirn of IDS contacted Combustion Science & Engineering, Inc. (CSE) and contracted with CSE to serve as an independent entity to scientifically evaluate this potential mode of failure and the applicable codes and standards, in order to independently test and validate or refute Mr. Zwirn's hypothesis regarding this mode of failure. This project has been designed and engineered to test the hypothesis put forth by Mr. Zwirn, that said mode of failure exists and whether or not said mode of failure violates Underwriters Laboratories, Inc. (UL) and National Fire Protection Association (NFPA) standards.

ANALYSIS

In order to meet the objectives of the project, CSE reviewed the applicable codes and standards to determine what is required regarding combination-listed fire and burglar alarm control units and conducted its own independent research and testing of this equipment to scientifically and technically validate or refute whether the mode of failure exists. Mr. Zwirn has indicated that said mode of failure exists for many combination-listed commercial burglar and fire alarm control units and for all combination-listed household burglar and fire alarm control units that utilize a single data-bus for its fire and burglar alarm control units. Therefore, CSE evaluated this hypothesis as it relates to combination-listed household and commercial fire and burglar alarm system control units. CSE approached the problem utilizing the Scientific Method, as explained in NFPA 921, the Guide for Fire and Explosion Investigations (2021). CSE considered the available information on the problem, gathered additional data, formed hypotheses, and tested the hypotheses. The testing of the hypotheses included an analysis of the applicable codes and standards as well experimental testing by CSE.

Review of Applicable Standards

Before testing of the equipment, CSE first considered the requirements in the applicable codes and standards related to this issue. National Fire Protection Association (NFPA) Standard 72®, National Fire Alarm and Signaling Code®, is recognized as the most authoritative standard for fire alarm systems nationwide. It is adopted by reference in most, if not all, model building codes and some version of NFPA 72® is adopted in some manner in every state in the nation (NFPA Codefinder, 2022). NFPA 72® has separate requirements for protected premises (commercial) installations in Chapter 23 as well as household (residential) installations in Chapter 29. As Mr. Zwirn has indicated that he thinks this mode of failure exists for some commercial combination-listed control units and most, if not all, household combination-listed control units, CSE analyzed the language in both portions of the standard. The relevant language from the applicable standards, including all relatively recent versions of said standards, can be found in Appendix C.

The language in NFPA 72® has been previously examined by Mr. Zwirn, particularly for household combination-listed fire and burglar alarm control units. Mr. Zwirn's expert report provides opinions about combination-listed control units being non-conforming and in some of his online videos² it says that the mode of failure which he found violates NFPA 72® and applicable UL standards as it relates to this equipment. Additionally, Mr. Merton Bunker, PE, the current Chair of the Correlating Committee of NFPA 72®, has also written two letters (see Appendix E) where he has opined that Mr. Zwirn's hypothesized fault violates the language of NFPA 72® and applicable UL standards for household and commercial installations. A letter from Mr. Zygmunt Staszewski, PE, FSFPE, an engineer with decades of fire alarm design experience, also indicates that the hypothesized fault violates the language of NFPA 72® and applicable UL standards.

For commercial installations, NFPA 72® (2019 Edition) states the following for listed non-fire alarm equipment connected to combination listed control units as follows:

23.8.4.4.2 *If the equipment is attached to the fire alarm system via separate pathways, then short circuits or open circuits in this equipment, or between this equipment and the fire alarm system*

² https://www.youtube.com/channel/UC_AhSpzDIMXP0EgCtMGWnZQ?

pathways, shall,³ not impede or impair the monitoring for integrity of the fire alarm system or prevent alarm, supervisory, or fire safety control signal transmissions.

This language appears in all editions of NFPA 72® between 2010 and 2022. In NFPA 72® versions from 2007 and before, the language was slightly different:

6.8.4.3 *Short circuits, open circuits, or grounds in this equipment or between this equipment and the fire alarm system wiring shall not interfere with the monitoring for integrity of the fire alarm system or prevent alarm, supervisory, or fire safety control signal transmissions.*

6.8.4.4 *All non-fire alarm components of a combination system shall be listed for fire alarm use unless removal, replacement, failure, or maintenance procedure on any non-fire alarm hardware, software, or circuits does not impair the required operation of the fire alarm system.*

Notably, this language or similar goes back to the 1993 Edition of NFPA 72® and is even referenced to being modified from the 1990 edition. Accordingly, the requirement that faults between the equipment and the system shall not impede or prevent monitoring of the system or control signal transmissions of the fire alarm system has been part of the standard for over three decades, if not longer.

The older versions of the standard state that if a fault were to occur in non-fire equipment, it shall not affect the operation and performance of the fire alarm equipment. In the newer versions, it is only if the non-fire equipment is on a separate pathway. For this analysis, CSE is assuming that the data-bus wiring contains both security and fire devices at all times and, therefore, the security devices are not on a separate pathway from the fire devices. But if only security devices were attached to the data-bus wiring, this would be a separate pathway and cannot interfere with the fire alarm functions. If Mr. Zwirn is correct that said potential mode of failure exists, it would violate the older versions of NFPA 72®. Additionally, if Mr. Zwirn is correct that said potential

³ The word “Shall” indicates a mandatory requirement under NFPA 72®.

mode of failure exists, whereby non-fire equipment is attached to the system including burglar alarm devices and/or other non-fire equipment on the pathway without fire alarm equipment (data-bus wiring)-and that short circuit conditions on this equipment or its wiring can completely disable the ability of a fire alarm system to perform alarm, trouble and supervisory functions, this would violate the current requirements of NFPA 72® for combination-listed commercial burglar and fire alarm systems.

The language for household installations is even more definitive on the issue. Since the 1999 edition, for household installations, NFPA 72®, National Fire Alarm Code®, has required that:

29.10.7.5 *Faults in other systems or components shall not affect the operation of the fire alarm system.*

Additionally, since 1993 (and referenced back to at least the 1989 edition of NFPA 74 in the 1993 text), except for the 1999 edition, NFPA 72® has required the following, or very similar, for household systems:

29.10.7.6 *Where common wiring is employed for a combination system, the equipment for other than the fire and carbon monoxide alarm system shall be connected to the common wiring of the system so that short circuits, open circuits, grounds, or any fault in this equipment or interconnection between this equipment and the fire and carbon monoxide alarm system wiring does not interfere with the supervision of the fire and carbon monoxide alarm system or prevent alarm or trouble signal operation.*

Significantly, NFPA 72® is noticeably clear-cut for household systems stating that if non-fire equipment is attached to a fire alarm system (i.e., a combination listed system), faults in this equipment shall not impede the operation of the fire alarm system. The residential non-fire alarm equipment does not have to be on a separate circuit for this mode of failure to be a violation of the fire code as is required in newer versions of NFPA 72® for commercial applications. Again, CSE is assuming that the data-bus wiring contains both fire and security devices. The reason for these

requirements is that fire alarm equipment is held to different listing standards due to the criticality of life safety to occupants in a household occupancy.

Indeed, the intention here is to ensure that if any of the equipment is not listed for fire alarm system use, and does not serve a fire alarm function, and is ultimately connected to a combination-listed control unit, it shall not render the system non-functional as it relates to a short circuit condition being introduced onto the single data-bus of the control units common wiring. If Mr. Zwirn's hypothesized mode of failure exists in household combination-listed fire and burglar alarm control units, we are of the opinion that this behavior of the system would materially violate these sections of NFPA 72®. Accordingly, our conclusion is in alignment with that of Mr. Bunker, PE and Mr. Staszewski, PE. This conclusion is also in agreement with responses from NFPA staff regarding technical questions posed by Mr. Zwirn, particularly regarding combination-listed household system requirements in NFPA 72®. A Senior Electrical Engineer of the NFPA staff in his response to Mr. Zwirn has replied that "You are correct that a failure in another system connected to the fire alarm system cannot affect the function of the fire alarm system."⁴ In summary, if the non-fire equipment is attached via a common wiring data-bus which would also include fire equipment, it cannot interfere with the functionality and reliability of the fire alarm system.

NFPA 72® is recognized as the most authoritative national standard for fire alarm systems and while NFPA standards outline some requirements for the performance of fire and combination-listed alarm equipment, the actual implementation and testing of those requirements in equipment is conducted by Nationally Recognized Testing Laboratories (NRTLs). Some examples of these laboratories are Factory Mutual, Intertek, and Underwriters Laboratories, Inc. (UL). These NRTLs evaluate and test equipment and if found acceptable, they "list" the equipment in accordance with applicable UL Standards. NFPA 72® requires that only equipment that is listed for its intended use be installed. NFPA 70®, National Electrical Code®, likewise requires listed equipment. The requirement for the use of only listed equipment ensures that there is an independent entity responsible for compliance (the NRTL). While there are multiple NRTLs as it relates to fire and

⁴ NFPA Technical Question response by Christopher Coache, Senior Electrical Engineer, dated 9/21/2021.

security alarm equipment, the applicable standards for implementation of the performance and reliability characteristics are subsumed within UL standards. Other NRTLs, such as Intertek, test the equipment in compliance with these same UL standards before listing the equipment. By way of further explanation, the NRTL is required to test or otherwise confirm that the equipment meets each section of the applicable UL standards. If the equipment performs in accordance with each applicable section of the standard, the equipment can achieve listing. If not, the equipment cannot be listed and is considered non-conforming. In turn, and as a result, the equipment cannot be put into the stream of commerce.

For combination-listed systems, UL standards include many requirements for components, materials, and testing to ensure that the equipment is safe for use and ultimately meets the crucial life safety reliability requirements and NFPA 72®. For commercial combination-listed systems, the applicable standards are:

- UL 864 Control Units and Accessories for Fire Alarm Systems
- UL 365 Police Station Connected Burglar Alarm Units and Systems

For household combination-listed systems, the applicable standards are:

- UL 985 Household Fire Warning System Units
- UL 1023 Household Burglar-Alarm System Units

All of the applicable UL standard requirements over multiple versions of these standards can be found in the code and standard matrices included as Appendix C.

As it relates to commercial systems, UL 365 states that all equipment for combination systems needs to also meet UL 864. This is for the 4th and 5th editions dating back to at least 1997 and to the present. As it relates to UL 864 for fire alarm system control units and accessories, starting in 2008, the 9th edition required the following:

56.1 *When a fire alarm system shares components, equipment, circuitry, and installation wiring with non-fire systems, short circuits, open circuits, or grounds in the non-fire system equipment or the connections between the non-fire system equipment and the fire alarm products shall⁵ not impair the required operation of the fire alarm system or prevent appropriate alarm, supervisory, or*

⁵ The word “Shall” indicates a mandatory requirement.

trouble annunciation and signaling, or unfaulted fire-safety control activation.

56.2 *To determine compliance with 56.1, the operation, removal, replacement, failure, or maintenance procedure on any hardware, software, or circuit not performing any of the fire alarm system functions shall not cause loss of any of the fire alarm functions, including supervision, or prevent required alarm, supervisory, trouble, or fire-safety annunciation, signaling, or actuation.*

As the hypothesized mode of failure includes a shutdown of the system including failure of indicating and/or notification devices, dialers, and keypads to function, as a result of the introduction of a short circuit condition onto the data-bus wiring or components that are required to be connected to the single data-bus, this violates UL 864. In 2014, with the 10th edition of UL 864, the requirements changed to some degree, but the conclusion is the same:

61.1.7 *Short circuits or open circuits in the non-fire equipment or in the wiring between the non-fire equipment and the fire alarm system shall not impede or impair the monitoring for integrity of the fire alarm system as described in Common Performance and Monitoring for integrity – Protected-Premises Units/Systems Section 56, nor impede or impair any fire alarm signal transmission or operations.*

61.1.8 *Single ground faults in the non-fire alarm equipment shall not impede or impair the monitoring for integrity of the fire alarm system, or impede or impair any fire alarm, supervisory or trouble signal transmissions or operation.*

61.1.9 *The required operation of the fire alarm equipment shall not be impaired by any failure of the non-fire alarm equipment hardware, software or circuits, or by any maintenance procedure, including removal or replacement of defective equipment or powering down of the non-fire equipment.*

As can be seen, in the more recent edition of UL 864, the requirements are expanded to better explain what is expected, but the ultimate meaning is still clear, that any non-fire components or wiring between those components and the fire alarm system shall not affect the operation of the fire alarm system. Unlike in newer versions of NFPA 72®, it does not specify separate pathways as noted for commercial applications. Therefore, if Mr. Zwirn's hypothesis holds for commercial

combination-listed control units, the non-conformity would violate UL 864, and by reference, UL 365.

For household combination-listed fire/burglar alarm system control units, UL 1023 is similar to UL 365 for commercial panels. Since 1999, UL 1023 has required household combination-listed systems to also meet the requirements of UL 985. Unlike UL 365, though, an additional requirement is present in UL 1023 and has been within this standard since 1996 it states:

***1.3** These requirements also apply to the use of combination systems, such as a combination fire-burglar-alarm system control unit. A combination system is connected in such a manner that fault conditions (shorts, open, grounds) in the burglar-alarm system circuit wiring, or interconnection between the fire- and burglar-alarm system circuits, will not interfere with the supervision of the fire alarm system or will not prevent intended alarm signal operation.*

Therefore, based on this language, if the hypothesized mode of failure exists, this would violate UL 1023 directly.

Further, UL 985 has had the following language in it since at least 2000 to present day:

***1.4** These requirements also apply to the use of combination systems, such as a combination fire-burglar alarm system control unit, which uses circuit wiring common to both systems. When common wiring is used for combination systems, it shall be connected in such a manner that internal fault conditions (shorts, opens, grounds) in the nonfire alarm (burglary) system circuit wiring, or faults between the fire and nonfire alarm system circuits, will not interfere with the supervision of the fire alarm system or prevent intended alarm signal transmission.*

Additionally, from 2000 to 2015, the following summarizes the requirements in the 5th Edition of UL 985:

***41.4** An open or ground fault in any circuit extending from a household control unit, other than the initiating device circuit, shall not affect the operation of the control unit except for the loss of the function extending from that circuit.*

41.6 *A fault condition, open, ground, or short of other than a fire alarm circuit of a combination control unit shall not affect the fire-alarm signaling.*

Section 41.4 of UL-985 has continued into the 6th edition of the standard to present day. However, section 41.6 is no longer in the standard as of the 6th edition in 2015, but other newer requirements have been included as follows:

41.3.1.3 *Short circuit or open circuit single faults in the non-fire equipment or in the wiring between the non-fire equipment and the fire alarm system shall not impede or impair the monitoring for integrity of the fire alarm system, nor impede or impair any fire alarm signal transmissions or operations.*

41.3.1.6 *The required operation of the fire alarm equipment shall not be impaired by any failure of the non-fire alarm equipment hardware, software or circuits, or by any maintenance procedure, including removal or replacement of defective equipment or powering down of the non-fire equipment.*

Review of all of these requirements indicates that UL 985 directly and by reference in UL 1023, as well as directly in UL 1023, unilaterally requires that household combination-listed systems include provisions that if there is some type of short circuit failure in the non-fire equipment or wiring to that equipment, it shall not affect the ability of the fire-portion of the alarm system to continue to operate reliably. If the hypothesized failure is correct, and a short circuit condition in the non-fire equipment and/or its interconnected data-bus wiring attached to the data-bus can render a household combination-listed system completely non-functional, this would be a violation of UL 1023 and UL 985, at the very least for systems listed since 2000, if not earlier.

Our findings agree with the analysis of Mr. Bunker, PE and Mr. Staszewski, PE, that the hypothesized fault identified by Mr. Zwirn violates UL 1023 and UL 985. NFPA 72® and the appropriate UL standards indicate that faults in non-fire equipment shall not cause the fire alarm system control unit to completely shut down as Mr. Zwirn has hypothesized and as he has successfully demonstrated in a multitude of online video tests. Mr. Zwirn sent his expert report outlining his findings to UL in the fall of 2020 and received a short letter response from UL in late

2020. The response from UL focuses mostly on household combination-listed systems. In the letter (see Appendix D), UL makes a number of claims regarding their interpretations of NFPA 72® and UL 985, the applicable UL standard for a household fire alarm system, and how said interpretation is implemented. These responses will each be addressed separately herein. Regarding the interpretation of NFPA 72® and UL 985, UL makes the statements shown in Figure 2.

- Both Chapter 29 of NFPA 72, the National Fire Alarm and Signaling Code, and UL 985 stipulate that a wire to wire (short circuit) fault is to be applied only where non-fire alarm equipment is directly interconnected to the fire alarm system.
 - UL 985, 6th edition published 2015 (Nov 2019 effective date) states:
Section 41.3.1.3 Short circuit or open circuit single faults in the non-fire equipment or in the wiring between the non-fire equipment and the fire alarm system shall not impede or impair the monitoring for integrity of the fire alarm system, nor impede or impair any fire alarm signal transmissions or operations.
- Circuits interconnecting only fire alarm equipment are not required by UL 985 to be subjected to a short circuit fault. This includes your example of an attack by fire, specifically resulting in a short circuit fault on the data/power bus. Neither NFPA 72, Chapter 29, nor UL 985 include requirements with respect to household fire alarm system pathway survivability to attack by fire.

Figure 2. Portion of UL response letter dated 12/18/2020 regarding NFPA 72®/UL 985 interpretation.

In their interpretation, UL is stating that NFPA 72® and UL 985 stipulate that a shorting fault is only to be applied when the non-fire alarm equipment is “directly interconnected” to the fire alarm system. This interpretation by UL is inconsistent with the language that UL has incorporated in their response letter (section 41.3.1.3 of UL 985) to Mr. Zwirn and does not exist in the language of NFPA 72® and UL 985 standards. Stated differently, there is no such stipulation in either of these standards and UL remains silent in their response as to the source of this language, and moreover, the verbiage stipulated does not reside within the applicable UL and NFPA standards. In contrast, the applicable UL standard only uses the term “common wiring” as discussed previously (section 1.4 of UL 985).

UL goes on to actually include the language from the 6th edition of UL 985 in Section 41.3.1.3 specifically stating that a short in the non-fire equipment or in the wiring between the non-fire equipment and the fire alarm system shall not impede its operation. Notably, there is no

use of wording such as “directly interconnected” between the non-fire equipment and the fire alarm system, and while UL 985 has changed between the 5th and 6th editions as discussed previously, Section 1.4 of both versions of UL 985 still mandates and states that when common wiring is used for combination systems, a short shall not interfere with the fire alarm system supervision nor alarm signal transmission.

Furthermore, devices, including non-fire equipment, are connected in parallel through the data-bus using common wiring. If a fault or short circuit occurs on the data-bus, this should not impede the functionality of the system. Yet Mr. Zwirn claims this failure mode exists. In CSE’s opinion, UL’s claims in their response letter on how the connection can be implemented (i.e. “directly interconnected”) are incorrect on this critical point, and it is highly unusual for any NRTL to attempt to re-interpret the plain language of the standards.

The second main bullet point in Figure 2 states that circuits with only fire alarm equipment are not required to be subjected to a short circuit fault. Notwithstanding this statement by UL, it is not germane to CSE’s analysis since the hypothesized mode of failure is not in the fire alarm equipment or circuits with only fire alarm equipment. It is in the common wiring of the data-bus, and any of its required parallel connected non-fire alarm equipment, such as control modules, zone expansion modules, wireless radio receivers, wireless radio alarm transmitters, DC powered security equipment, etc. For fire equipment, if a two-wire smoke detector initiating device circuit were to have a short and fail, it is expected that said circuit may fail but the rest of the control unit would remain active as said two-wire smoke detector circuits do not connect to the data-bus. If a four-wire addressable smoke detector were solely connected to the data-bus, and under the proposed mode of failure had a short, this would also cause failure of the data-bus and failure of the control unit. Because this failure is in only fire equipment, though, this is not in violation of NFPA 72® or UL 985. UL’s statement is in agreement with our understanding of the standard language. Nevertheless, CSE is considering a situation where there will be both fire and non-fire devices attached to the data-bus wiring. Additionally, perhaps it should be considered in future editions of UL 985 whether a fire device attached to data-bus wiring should be allowed to not only fail itself when subjected to a short circuit fault, but also to catastrophically fail the entire control unit. Again, it may be difficult to do anything about the fire-only equipment, which has to be present for fire functionality. The currently standard-mandated extra protection against shorts and

other faults is only for non-fire equipment and common wiring, as the equipment is not necessary for fire alarm system functionality and therefore shall not affect it. Regardless, if the single data-bus and its common wiring have one or multiple non-fire components attached, which is commonplace, it shall be subjected to a short circuit fault testing protocol, as per UL and NFPA standards before it can successfully pass the listing process by the NRTL. Non-fire components shall not affect the operation of the fire alarm system, the supervision of the fire alarm system, or any fire alarm signals being transmitted to the remote central station. In other words, the applicable UL standards and NFPA standards as discussed in this report mandate this uninterrupted method of functionality, operation and reliability despite a short circuit condition being introduced onto the common wiring of the control unit data-bus and/or as it relates to a short circuit condition being introduced onto the non-fire equipment that is required to be connected in parallel to the single data-bus of the control unit.

The UL response letter goes on to specifically indicate how UL applies section 41.3.1.3 from the 6th edition of UL 985, as shown in Figure 3.

- | |
|---|
| <ul style="list-style-type: none"> • Products/devices may additionally include security listing in addition to fire alarm listing when both fire and security signals can be processed by the product. An example includes zone expanders. These products connected directly to the communication/power bus are considered fire alarm products, even where only separate security devices are interconnected to them. In this instance the combination fire and security product/device is functioning as an isolation device. The device is isolating non-fire alarm listed devices from the communication/power bus. This alleviates the need to conduct a short circuit test on the communication/power bus. • When non-fire alarm devices are directly connected to fire alarm listed devices/products, which are in turn connected to the communication bus, short circuit faults are applied directly to the non-fire alarm |
| <p>devices and the interconnecting wiring to the fire alarm listed devices/products. Compliance is confirmed when the short circuit faults do not affect fire alarm and/or carbon monoxide alarm signaling operation.</p> <ul style="list-style-type: none"> • A short circuit fault is applied to the communication/power bus when non-fire alarm devices (for example when a system incorporates a Listed security only keypad or addressable PIR) are directly connected to the communication/power bus. • A short circuit fault is also applied to output power supply circuits when non-fire alarm equipment is directly connected to those circuits. Typically, this includes security devices such as passive infrared motion sensors. |

Figure 3. Portion of UL response letter dated 12/18/2020 regarding how UL applies Section 41.3.1.3 of the 6th edition of UL 985.

From Figure 3, it can be seen that UL attempts to rationalize and justify to Mr. Zwirn that when a product is listed for both fire and security, such as the example of a zone expansion module, if it is connected directly to the communication/power bus (data-bus), it is considered a fire product. This interpretation is improper. For any alarm product to only be considered as a fire product requires its listing to match the listing statement that UL makes. However, zone expansion modules are dual listed for both fire and burglary applications so it cannot only be considered as a fire product since the equipment manufacturer sought and received the dual burglar and fire alarm listing from the NRTL. If other non-fire items are connected to that dual-listed product, “the product is acting as an isolation device” statement by UL is incorrect as shown in the video testing by Mr. Zwirn and verified in CSE’s independent scientific testing, as will be discussed later in this report. Therefore, the suggestion by UL that the data-bus or the wiring between the data-bus and the zone expansion module is “interconnecting wiring” does not reside in the applicable UL and NFPA standards. It is common wiring.

Similarly, the suggestion by UL that it does not need to test for shorts because it is isolated is incorrect, based upon the dual listing of the component part and the fact that the zone expansion modules are not isolation devices when they are connected to the data-bus nor can UL create verbiage such as “directly interconnected” in an attempt to modify the plain language in the UL standard. Otherwise, there would be no requirements or rationale to have sections 1.4, 41.6, 41.3.1.6 and 41.3.1.7 of UL 985 and the applicable sections of NFPA 72® in force. Further, there is nothing in any of the sections of both the UL standards and NFPA 72® standard that define a zone expansion module as an isolation device. Moreover, there is nothing codified in the equipment manufacturers specifications for any of the alarm equipment manufacturers of zone expansion modules that define a zone expansion module as an isolation device.

At the same time, the respective on-board input circuits on zone expansion modules are inherently supervised with factory supplied end of line resistors (EOLR). Mr. Zwirn has shown in video testing that with a zone expander, while the expander is indeed isolating burglar-only circuits from the data-bus, they are still being powered and the burglar-only circuits must be connected to the data-bus through the zone expander. This means that the common wiring connecting the non-fire devices to the fire alarm system includes not only the wiring from the non-fire equipment to the zone expander, but also the common wiring from the zone expander to the data-bus. UL should

be testing the unsupervised side of the zone expander. The result of this is that if there is a short circuit fault condition on the common wiring from the data-bus to the zone expander, which is all part of the common wiring to the non-fire devices, it catastrophically shuts down the entire panel. It should also be emphasized that in none of the equipment manufacturers specifications reviewed as part of CSE's analysis, includes any of the language of what UL attempts to suggest by number one (1) changing the plain language of applicable UL standards and number (2) by positing that they do not apply to the data-bus. It just equates to inaccurate claims by UL regarding the actual language in the standard.

UL's suggestion in its letter to Mr. Zwirn as to how UL is implementing this listing requirement is inaccurate. The straight-forward technical rationale is that this implementation does not recognize a short circuit condition being introduced on the common wiring between the fire alarm system and non-fire alarm devices. In the simplest of terms, not adhering to the plain language in the listing requirements materially violates section 41.3.1.3 and it also violates section 1.4 of UL 985.

As further evidence of the violations of 41.3.1.3, UL is indicating that if a non-fire device is connected to a fire device, which is then connected to the data-bus, they apply a short to the non-fire alarm device and the wiring between it and the fire alarm device. They also indicate in their letter, though, that they apply a short circuit fault to the actual data-bus when non-fire alarm devices are directly connected to it, and they apply a short circuit fault to output power supply circuits where non-fire alarm equipment is connected to those circuits. This would seem to cover some of the scenarios identified by Mr. Zwirn where some devices are getting power from the same terminals as the data-bus and would cover some devices connected to the data-bus.

Notwithstanding, despite how UL represents in its letter as to how they specifically test listed equipment, Mr. Zwirn has shown in his many videos of testing that short circuits on this wiring still renders the combination-listed fire and burglar alarm control unit non-functional. Given that, from a fire protection standpoint, CSE does not technically see anyway to duplicate what UL states that it does based upon CSE's testing (as discussed later in this report) and Mr. Zwirn's many videos, nor did UL offer any explanation or videos to support its contention. It was considered that perhaps UL was testing to older versions of UL 985. To the extent the UL letter to Mr. Zwirn was based upon the combination-listed equipment not being tested to the 5th edition

of UL 985, but instead to the (6th edition) of UL 985, this hypothesis also fails, as UL does not exclude the 5th or 6th edition in their response letter to Mr. Zwirn and the 5th edition of UL 985 still uniformly requires that a short circuit condition in the common wiring shall not affect the operation of the fire alarm system. Accordingly, if Mr. Zwirn's testing is accurate and his proposed failure mode exists, it seems more likely than not that technically this testing could not have been performed by UL as stated, nor could it have successfully been performed on any of the different combination-listed control units that Mr. Zwirn tested, which failed, or on the combination-listed control units that CSE tested, which also failed as described later in this report.

What UL represents that it performs and how its testing occurs is not consistent with the technical results and physical evidence of the scientific and technical testing that was independently performed by CSE, and shown in Mr. Zwirn's testing videos. To the extent that UL was testing the combination-listed control units as represented and required by the respective listings, their testing should be able to be duplicated. CSE found that the combination-listed control units still fail following what UL represented to Mr. Zwirn as their testing methodology. In any event, CSE repeatedly found that combination-listed control units become non-functional when introducing a short circuit condition onto the data-bus.

As will be discussed later in this report, CSE demonstrated that testing in accordance with UL and NFPA standards will cause combination-listed control units to instantly fail. Noticeably absent in UL's letter to Mr. Zwirn is that despite UL receiving videos of testing on many different types of combination-listed control units from Mr. Zwirn, UL chose not to demonstrate that what they say occurs, nor do they make any attempt to explain or reconcile why Mr. Zwirn's videos, time after time, demonstrate that combination-listed control units from different manufacturers repeatedly failed. Of course, if UL now wanted to perform testing, CSE would consider participating in, analyzing, or attending this testing at the UL laboratory, or to host said testing.

As identified by Mr. Zwirn and equipment manufacturers, combination-listed control units require common data-bus wiring to be installed throughout a household or commercial occupancy (generally for thousands of feet) in both concealed and unconcealed spaces. For instance, a zone expansion module can be located and connected to the data-bus circuit anywhere in an occupancy, and this applies to connection of both non-fire and security initiating detection devices. Mr. Zwirn, Merton Bunker, Zygmunt Staszewski, and now CSE have jointly taken the position that UL has

violated Section 1.4 of UL 985, besides the other provisions of UL and NFPA 72® standards that are codified in this report. Additionally, UL has certainly violated the spirit and intention of these requirements which is to ensure that smoke and carbon monoxide detectors that are installed in an occupancy are functional and reliable for the life safety function that they were designed and manufactured to provide to both consumers and the public. A short on this wiring, per Mr. Zwirn's hypothesis, shall not render the system non-functional. Consequently, the proposed mode of failure violates Section 1.4 of UL 985 and would certainly violate the spirit and intention of these requirements, which is to ensure that a non-essential non-fire portion of a combination-listed system is not capable of rendering the fire alarm portion of the system non-functional if a short circuit condition occurs.

UL also indicates that NFPA 72® and UL 864 do not have identical requirements for commercial applications as compared to household requirements. While it is true that the language is slightly different in UL 864, as well as in the non-household chapters of NFPA 72®, and hence is not identical, the meaning of these requirements is completely identical in that a short circuit condition in non-fire alarm equipment, wiring, etc. shall not render the fire alarm portions of a combination-listed system non-functional. The NFPA 72® requirements for commercial systems make mention of separate circuits, but the UL 864 standard does not. Therefore, if any combination-listed commercial system also suffers from the hypothesized mode of failure, they too would be non-conforming to NFPA 72® and UL 864 standards.

One last point that UL makes in its letter to Mr. Zwirn, after the bulletpoints discussed above (see Appendix D), is that they have not received information of field incidents associated with these products. First, there is nothing in UL standards which states that before a requirement is subsumed in any of its standards, UL must first have evidence of a field incident(s). Secondly, UL is implying that this issue is not manifesting itself as a real danger to life safety in the field. Noticeably, if UL has not received any information of field incidents, then it begs the question as to why then both UL and NFPA 72® have had this language in the aforementioned standards for decades that short circuit conditions shall not affect the operation of the fire alarm system. The salient issue here is that these minimum requirements were incorporated into both UL and NFPA 72® standards time after time, and adopted by members of the respective technical committees and panels, so it is not germane whether UL is or is not aware of any field incidents, because the

applicable language subsumed in both UL and NFPA 72® standards constitutes mandatory requirements, that if not complied with violate both of the respective standards. Non-conforming combination-listed control units increase the dangers to all occupants in an occupancy who rely on early warning life safety fire alarm systems to escape from a premises before it becomes untenable. If the mode of failure is confirmed, then Mr. Zwirn has identified that there are household and commercial burglary and fire alarm combination-listed control units that are non-conforming.

By way of technical comparison, if a non-conformity was identified in a smoke detector(s), it would require immediate replacement wherever they were installed. Under this same scenario, if these combination-listed control units are non-conforming, the same process would even be more significant because all automatic fire alarm initiating detection devices (smoke detectors) in an occupancy are required to either connect wirelessly or through hardwiring to the combination-listed control unit for system functionality and operation

CSE could certainly envision scenarios where foreseeable failure would be expected on a combination-listed control unit. For instance, during a fire in a wall cavity (or attic, or basement) near data-bus wiring or equipment that is connected to the data-bus, whereby the fire compromises the data-bus or equipment that is connected to the data-bus and causes a sustained short circuit condition to be introduced onto the control unit. With the combination-listed control units being non-functional, no sirens would sound inside the home (unless the system was armed with hardwired DC-powered burglar devices as will be described later), none of the remote system keypads would sound, and the remote central station would not receive any fire alarm signal(s). Dangerously, this can rapidly happen before smoke from the fire can escape from inside the wall cavity and travel into the living space where automatic initiating detection devices are required to be present to detect fire and smoke. Indeed, NFPA reports that electrical distribution and lighting equipment is the third most prevalent cause of home structure fires, constituting 9% of all residential home fires (Ahrens and Maheshwari, 2021). Additionally, they lead to 18% of residential deaths and 10% of residential injuries. Therefore, electrical fires are a real threat in residences and certainly can and do occur in wall cavities. Furthermore, while only 26% of fires occur in the home, 75% of fire deaths and 72% of fire injuries occur in the home (Ahrens and Maheshwari, 2021). Additionally, NFPA has indicated that 60% of residential fire deaths occur when smoke detection is not present or disabled (Ahrens, 2021). This indicates the magnitude of

the home fire problem and the critical role that functional smoke detection plays in residential life safety. If a fire were to occur in a wall cavity and disable the detection and notification system, this would be a dangerous situation that has been shown in these studies to lead to residential fatalities and injuries.

Regardless, if the proposed failure mode exists, this indicates that there are combination-listed fire and burglar alarm systems present in the field that do not meet the minimum requirements of the applicable UL and NFPA standards. Further, the reason(s) for listing equipment is to ensure that it meets the applicable and minimum NFPA and UL standards. The requirements for these applicable NFPA and UL standards are made by technical committees or standards technical panels consisting of a mix of industry professionals, subject matter experts and stakeholders who determined that such requirements were necessary and required. If said requirements are not being met by equipment manufacturers as hypothesized, but are still being listed and installed, this non-conformity is extremely dangerous from a life-safety standpoint. Authorities Having Jurisdiction (AHJs) would likely not accept the installation of non-conforming equipment that contains fire alarm and carbon monoxide automatic initiating detection devices. Alarm contractors and users of the equipment would likely not knowingly accept the installation of non-conforming equipment for any alarm system let alone for a life safety fire alarm and carbon monoxide system with the inherent dangers hypothesized by Mr. Zwirn.

In sum, CSE's review of the codes and standards indicates that these documents clearly indicate that an electrical short circuit on non-fire equipment, including the data-bus and its wiring, shall not render a combination-listed fire/security system control unit non-functional. This code requirement applies for both household and commercial combination-listed systems and dates back to at least the early 2000s. UL's implementation and interpretation of these sections of their standards and NFPA 72® have allowed this hypothesized and dangerous mode of failure to exist, despite their testing and ergo, combination-listed control units have become listed despite non-conformities. Failure of combination-listed control units to meet UL and NFPA standards violates the adopted fire code in each state of the United States and needlessly puts occupants inside an occupancy at an increased risk of serious personal injury and/or death during a life safety emergency.

Experiments

CSE was contracted by IDS Research and Development, Inc. to perform independent scientific and technical testing of combination-listed alarm control units based upon the hypothesized mode of failure. CSE, acting as an independent fire protection engineering laboratory, endeavored to test and evaluate Mr. Zwirn's hypothesis, with both a combination-listed household fire and burglar alarm control unit and a combination-listed commercial fire and burglar alarm control unit.

The combination-listed commercial alarm control unit selected for testing was a Honeywell Vista 32FBPT. The household combination-listed alarm control unit selected was a Honeywell Vista 20P. Both of these panels are designed to be installed with fire and security alarm components, and both are UL listed. The 32FBPT panel is listed under UL 985, 1023, 365, 864, and 1610. The Vista 20P control unit is listed under UL 985, 1023, 365, and 1610.

New Vista 32FBPT and 20P combination-listed alarm control units were purchased from ADI Distribution⁶ by IDS Research and Development, Inc. but were shipped, new and unopened, directly from ADI to CSE. CSE then contracted with AFA Protective Systems, Inc.⁷ (Halethorpe, Maryland office) to install and program both of the systems. AFA is an internationally recognized alarm systems contractor who had its certified technicians install all of the alarm equipment at CSE's laboratories in accordance with the equipment manufacturers' published specifications, UL Standards and NFPA 72® standards. The only information that was explained to AFA, the contractor/installer, is that CSE will be performing testing on the systems after installation and that the equipment shall be installed in the same manner as how a standard commercial or household fire and security systems installation would be. The two combination-listed control units were installed as two separate alarm systems with fire and security equipment connected to each panel.

All connected alarm equipment was UL listed and typical of a standard fire and security system installation. The equipment parts that were integral to each of the installed alarm systems are listed below.

⁶ More information can be found at www.adiglobal.com.

⁷ More information can be found at www.afap.com.

Honeywell Vista 32FBPT System Components:

- One hardwired 4-wire smoke detector (BK-4WB)
- One wireless smoke detector (5808W3)
- One hardwired motion detector (CK-IS3035V)
- One hardwired audio glass break detector (CK-FG1625)
- One fire keypad (6160CR-2)
- One security keypad (6160)
- One wireless radio receiving unit (5881ENHC)
- One horn/strobe audible indicating appliance for fire alarm annunciation (BK-P2RL)
- One siren for security alarm annunciation (WAVE2)
- One hardwired door contact
- One wireless radio alarm transmitter (SLE-LTEVI)
- One V-plex expander (UZ-NP712)
- One Enhanced Control Protocol (ECP) isolator (ECP-ISO)

Honeywell Vista 20P System Components:

- One hardwired 4-wire smoke detector (BK-4WB)
- One wireless smoke detector (5808W3)
- One hardwired motion detector (CK-IS3035V)
- One hardwired audio glass break detector (CK-FG1625)
- One security keypad (6160)
- One wireless radio receiving unit (5881ENH)
- One siren for security alarm annunciation (WAVE2)
- One hardwired door contact
- One wireless radio alarm transmitter (LTEM-XV)
- One relay module (4204)

It should be noted that the only piece of equipment that was installed by CSE (and not AFA) was the Model 4204 relay module. The installation of this relay module was done after AFA completed its work. Adding the relay module to the Vista 20P combination-listed control unit allowed the power to be reset to the 4-wire smoke detector after it went into an alarm condition using the relay module, rather than the trigger cable, once the remote system keypad was manually reset.

All other equipment, installation, wiring, and programming was completed and initially functionally tested by AFA. As part of the scope of work, AFA trained CSE on the testing and functionality for both of the Honeywell Vista combination-listed control units. AFA also provided CSE with remote access to their own UL Listed Central Station that was monitoring both of the

accounts so that alarm, trouble and restore activity/history could be viewed during testing by CSE in real-time using AFA's specialized monitoring website that is directly linked to AFA's UL Listed Central Station.

Both systems were mounted to a single sheet of plywood. Terminal blocks were added to the wiring inlet of each piece of attached equipment in order to facilitate the short circuit testing. Once the installations were completed, the two systems were tested and documented with photographs as well as a diagram of the wiring configurations. Photos of the two completed systems as well as final wiring terminations inside the panels are shown as Figure 4 through Figure 8 below.



Figure 4. Vista 20P (left) and Vista 32FBPT (right) combination-listed control units mounted to a sheet of plywood in CSE's laboratories.

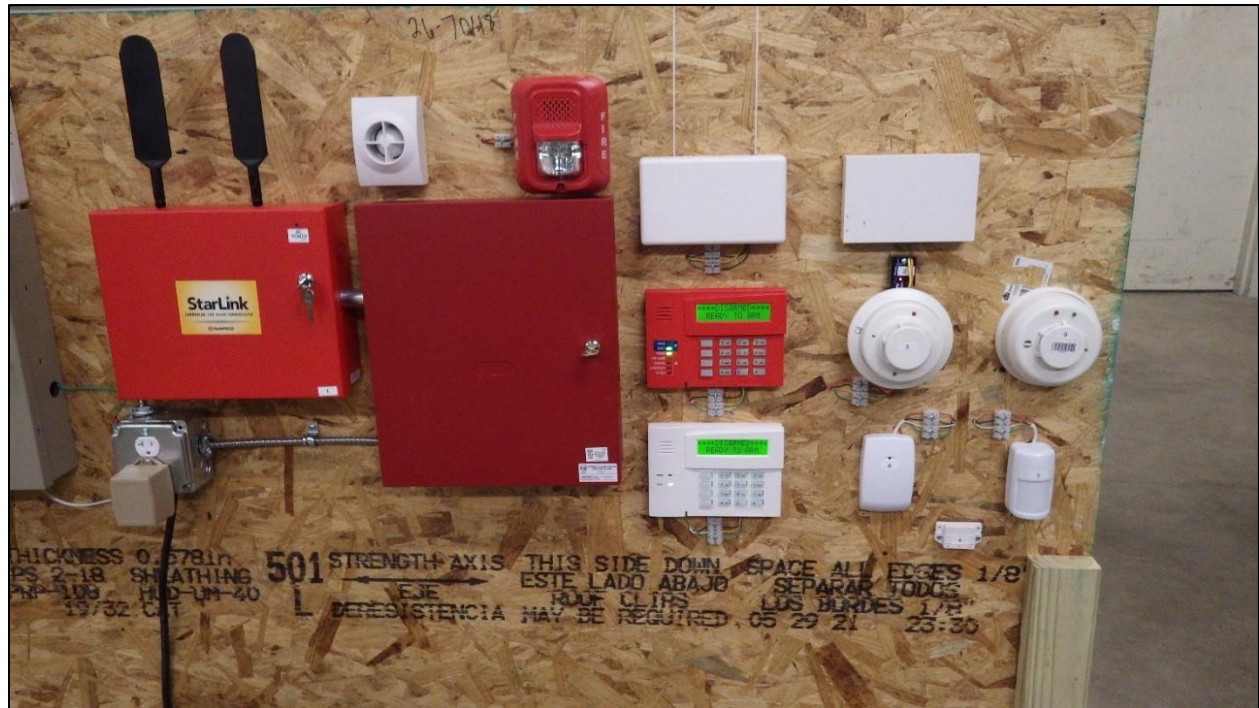


Figure 5. The Vista 32FBPT combination-listed control unit and all other fire/security devices connected to it.



Figure 6. The Vista 20P combination-listed control unit and all other fire/security devices connected to it.

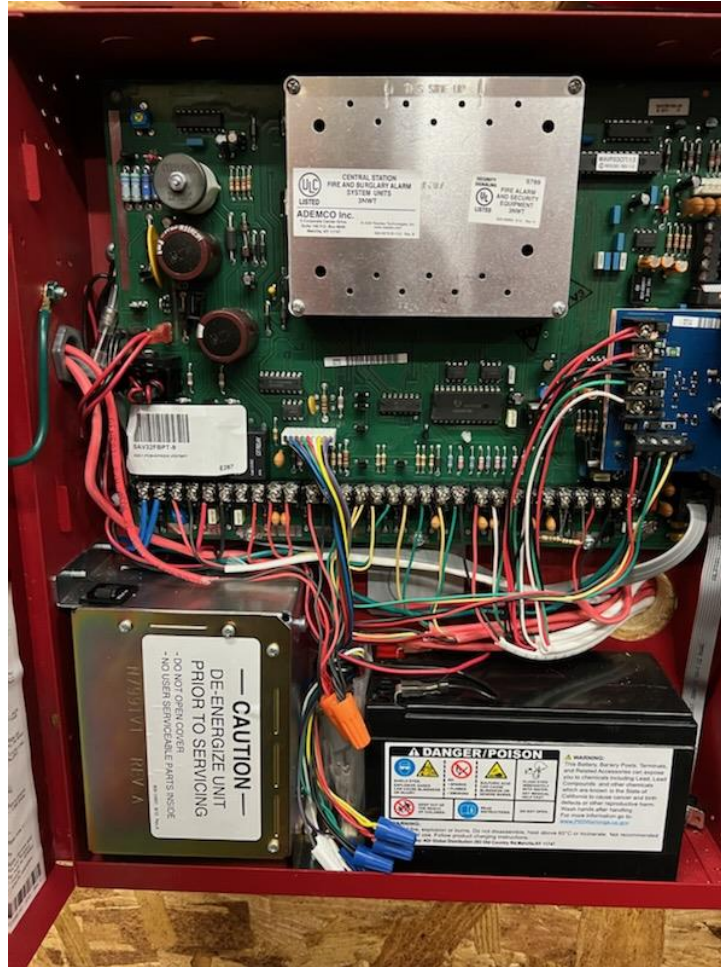


Figure 7. Inside of the Vista 32FBPT control unit panel showing wiring configuration and final wiring terminations.

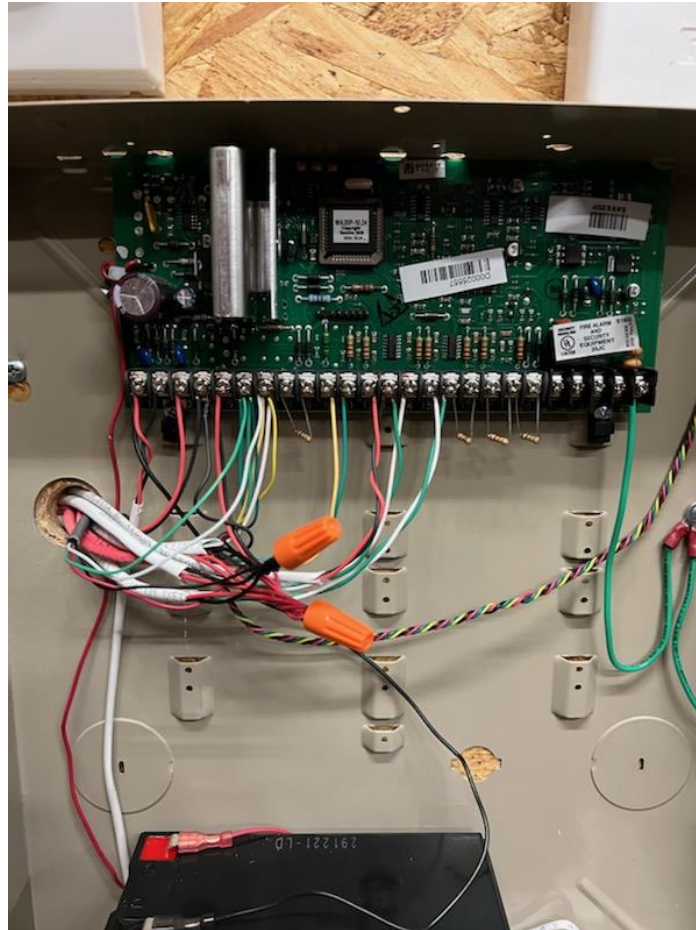


Figure 8. Inside of the Vista 20P control unit panel showing wiring configuration and final wiring terminations.

The first test completed on the two systems was alarm functionality testing when the system was in a normal condition. The purpose of this test was to confirm that the alarms activated properly and that the central station received the alarm signal(s), as would be expected for a properly operating fire and security alarm system. The system was not armed for the smoke detector/alarm tests. Conversely the system was armed for the motion and glass break detector testing. The smoke detectors were triggered using their on-board test buttons. The testing procedure for this was as follows:

1. Activate individual alarm sensor zones (smoke detectors were triggered using their on-board test buttons, motion detectors were triggered by creating detectable movement in

front of this intrusion detection device, and the audio glass break detectors were activated by simulating the sound of breaking glass through tapping on the outside of the detector).

2. Allow the initiating detection device to stay in an alarm condition for approximately 1 minute, and then silence and reset the alarm system from one of the remote station keypads.
3. Record central station activity/history.

A table was completed for all alarm functionality testing. The results from this testing can be seen in Table 1.

Device	Time of Test	Device Alarm Locally?	Panel Received Alarm and Siren Sounded?	Central Station Signal History
Vista 32FBPT				
Motion detector	3:15 PM	Yes	Yes	Z5 Burglar Alarm Motion – 15:15:57 Z5 Motion Restore – 15:16:01
Glass Break detector	3:17 PM	Yes	Yes	Z6 Burglar Alarm Glassbreak – 15:18:58 Z6 Glassbreak Restore – 15:19:00
4-wire smoke detector	3:21 PM	Yes	Yes	Z3 Smoke Detector Alarm – 15:21:27 Z3 Restore Fire Alarm – 15:23:04
Wireless smoke detector	3:24 PM	Yes	Yes	Z9 Wireless Smoke Alarm – 15:24:28 Z9 Wireless Smoke Restore – 15:25:28
Vista 20P				
Motion detector	3:00 PM	Yes	Yes	Z4 Burglar Alarm Motion – 15:00:26 Z4 Motion Restore – 15:00:49
Glass Break detector	3:04 PM	Yes	Yes	Z5 Burglar Alarm Glassbreak – 15:04:24 Z5 Glassbreak Restore – 15:04:53
4-wire smoke detector	3:08 PM	Yes	Yes	Z2 Smoke Detector Alarm – 15:07:52 Z2 Smoke Detector Restore – 15:08:51
Wireless smoke detector	3:11 PM	Yes	Yes	Z9 Wireless Smoke Alarm – 15:10:51 Z9 Wireless Smoke Restore – 15:11:56

Table 1. Alarm functionality testing results for both combination-listed control units in the normal condition.

As mentioned previously, the smoke detectors were activated using their respective on-board test buttons. The smoke detectors also responded to UL Listed canned smoke as well. For all alarm functionality tests on both systems, each device alarmed locally, activated the system

keypad(s) built in annunciators, and the siren sounded. Additionally, an alarm for the zone assigned to the individual initiating detection device that was activated transmitted an alarm signal via the respective systems' wireless radio alarm transmitters to the central station, followed by a restore when the systems keypad was reset. An example of the central station activity/history log for the Zone 9 wireless smoke detector that was connected to the Vista 20P combination-listed household fire and burglar alarm control unit during the alarm functionality testing as shown in Figure 9 below.

Event Date	Operator	Zone	State	Event	Location/Comment
3/28/2022 15:11:56		9	R	CIR110 - RESTORE Fire Alarm	*Test WIRELESS SMOKE
3/28/2022 15:10:51		9	A	1506 - SMOKE DETECTOR-COMM	*Test WIRELESS SMOKE

Figure 9. Central station activity/history log for the Vista 20P Combination-listed Control Unit that was programmed on the control unit to wirelessly monitor and supervise the wireless smoke detector which was functionally activated into an alarm condition.

This alarm functionality testing confirms that the alarm systems were programmed and installed correctly, have communication with the central station, and would react normally in the case of a fire or security device activation. The second test completed on the two combination-listed alarm system control units was electrical short circuit testing. The purpose of this testing was to directly assess Mr. Zwirn's hypothesis. The data-bus wiring is a bundle of wiring consisting of 4 individual conductors. Two of the wires are designated for positive and negative power, and the other two wires are designated for the data transfer. Each piece of individual equipment was electrically shorted by connecting the positive and negative wires going into each device (2 of the data-bus wires). Short circuit tests were completed for a momentary short (a few seconds) and a sustained short. During a fire, the heat melting the individual data-bus wires together will create a short circuit condition that will persist indefinitely. Therefore, the sustained short testing is recreating what would happen with fire attacking the data-bus wiring.

Both systems were not armed during this initial testing. However, these short circuit tests were repeated with the systems armed as well. The procedure for the electrical short circuit testing on both systems was as follows:

1. Short individual device across power input for a few seconds and then remove the short.
2. Record what equipment lost power during the short.
3. Record the time that it took for the system to restore and view the central station activity/history.
4. After momentary short was removed and system is back to normal operating condition, short same individual device for a sustained amount of time (greater than 60 seconds) and record system behavior.

The results of the electrical short circuit testing on the Vista 32FBPT panel system can be seen in Table 2.

Vista 32FBPT Electrical Short Circuit Condition Testing					
Device Shorted	Time Momentary Short Circuit Condition Created	What Equipment Lost Power	Time to System Restore/Keypad Reading	Central Station History	Results for Sustained Short Circuit Condition
4-Wire Smoke Detector	5:00	4-wire alarm, wireless receiver, Burglary keypad, GB/Motion detectors, and wireless radio alarm transmitter	Power to devices returns in seconds, 01 Radio Trouble on fire keypad can be cleared immediately once short circuit condition is removed	Z1 Radio Trouble – 17:02:13 Z1 Radio Restore – 17:02:18 Z2 Smoke Power Trouble – 17:02:20 Z2 Smoke Power Restore – 17:02:25	Sustained short circuit condition rendered combination listed control unit non-functional and non-compliant with UL and NFPA standards
Motion Detector	4:52	Motion and glass break detector	Faults for GB and motion detectors on burglary keypad during short return to normal once short circuit condition is removed, DC power to detectors returns in seconds	None	None
Glass Break Detector	4:53	Motion and glass break detector	Faults for GB and motion detectors on burglary keypad during short return to normal once short circuit condition is removed, DC power to detectors returns in seconds	None	None
Wireless Receiver	5:05	4-wire alarm, wireless receiver, Burglary keypad, GB/Motion detectors, and wireless radio alarm transmitter	Power to devices returns in seconds, 01 Radio Trouble on fire keypad can be cleared immediately once short is removed	Z1 Radio Trouble – 17:07:10 Z1 Radio Restore – 17:07:15 Z2 Smoke Power Trouble – 17:07:17 Z2 Smoke Power Restore – 17:07:21	Sustained short circuit condition rendered combination listed control unit non-functional and non-compliant with UL and NFPA standards
Fire Keypad	4:54	Only fire keypad	Fire keypad powers back on in a couple of seconds	None	None
Burglary Keypad	4:56	Only burglary keypad	Burglary keypad powers back on in a couple of seconds	None	None
V-plex Zone Expander	4:58	Only expander	Expander powers back on in a couple of seconds	None	None

Table 2. Vista 32FBPT electrical short circuit condition results.

For the commercial Vista 32FBPT combination-listed control unit, when a short circuit condition was created across the power wiring (2 of the 4 wires in the data-bus circuit wiring) to

the 4-wire smoke detector or wireless receiver, power and functionality was lost to all other devices connected to the data-bus. This included the 4-wire smoke detector, wireless receiver, motion and glass break detectors, remote system burglary keypad, and the wireless radio alarm transmitter. The only devices that remained functional during the introduction of a short circuit condition to the 4-wire smoke detector or to the wireless receiver were the fire keypad and V-plex expander. The reason the wireless receiver on the system lost power and functionality when a short circuit condition was introduced onto the data-bus circuit is that it is required to connect to the same positive and negative DC power output terminals in the control unit that the positive and negative power side of the data-bus circuit is required to connect to as well. The fire keypad showed a radio trouble and sounded its audible on-board annunciator during the short circuit condition, but the fire radio was without power and became non-functional. Therefore, no data was transmitted to the central station. In other words, under these short circuit conditions to either the 4-wire smoke detector or wireless receiver, no fire alarm signals or any other signals would be able to be transmitted to the central station during a fire emergency. For example, if a fire melted the wiring running from the data-bus to either of these devices and caused a short, the devices would remain permanently in a short circuit condition meaning that the wireless radio would remain without power and no alarms could be transmitted to the central station.

Generating a momentary short circuit of a few seconds across the 4-wire detector or wireless receiver and then removing it caused all of the data-bus connected devices to lose power and then power back up within a few seconds. Once the short was removed and power had been restored to all devices, the radio trouble on the fire keypad could be cleared. The central station received a radio trouble/restore and a sensor trouble/restore, but only once the short circuit was removed. Thereafter, the radio was powered back on and was able to reconnect for normal functionality.

Creating a short circuit condition across the fire keypad, burglary keypad, or the V-plex zone expander only caused that individual device being shorted to lose power. When the short circuit condition was removed, the shorted device powered back on within a few seconds, and no signals were transmitted to the central station as a result of the short.

A short circuit condition that was introduced across the power input of the glass break detector caused the motion detector to lose functionality as well. The inverse of this was also true,

in that a short circuit condition across the motion detector caused the glass break detector to lose functionality. As set forth in the equipment manufacturers specifications, the auxiliary power output for DC powered intrusion detection devices uses one common supply. When either of the security alarm initiating detection devices (glass break and motion detector) were shorted, faults appeared on the security keypad for both the glass break and motion detector. The two security alarm initiating detection devices shorted each other out, but did not short out any other pieces of equipment so no troubles or alarms were received at the central station and the faults cleared once the short circuit conditions were removed and power was restored.

The difference in outcomes when the various pieces of equipment were shorted is due to the presence of the ECP isolator. Notably, the ECP isolator is not included with the purchase of the Vista 32FBPT combination-listed control unit but was used and installed in CSE's testing. Items on the protected side of the isolator (burglary keypad, security alarms) were isolated from the fire devices (4-wire smoke detector). Therefore, a short on the protected side of the isolator did not short the rest of the devices wired to the data-bus. In contrast, a short on the unprotected side of the isolator in either the 4-wire smoke detector or wireless receiver caused all other devices on the data-bus to lose power and functionality, including the wireless radio.

The behavior of the Vista 32FBPT system was largely the same if the short was created for a longer period of time (i.e., sustained) and then removed. The only change with a longer sustained shorted condition on the control unit which was then removed involved the 4-wire smoke detector and wireless receiver. If a short circuit condition across either of these two devices was left for a longer period of time or if it was sustained indefinitely, as would be expected to occur if fire attacking this wiring created the short circuit condition, the radio would be non-functional for the entire duration of the short circuit condition. After about a minute of the radio and other equipment connected to the data-bus being non-functional, a "Check 974 Dialer 1" appeared on the fire keypad. Upon removal of the longer duration short, the system was still able to power back on normally. Once power was restored to the radio and the rest of the devices, the "Check 974 Dialer 1" eventually restored itself and the system returned to being fully functional.

The 32FBPT system performed largely the same for the short circuit testing when both the fire and security keypads were set to armed away and armed stay. A short circuit across the 4-wire smoke detector or wireless receiver still caused all other devices connected in parallel to lose

power, including the fire radio. The only difference in this case was that the burglary siren sounded when these hardwired motion detectors and/or glass break detectors were shorted. The activation of the alarm system indicating that the burglar alarm was activated does not warn the occupant of a fire and/or carbon monoxide detection emergency as the siren sounds as a burglar alarm, not as a T-3 fire or T-4 carbon monoxide siren. This siren continued to sound until the short was removed and the alarm could be cleared on the burglary keypad. While the short was in place, the wireless radio did not have power and could not transmit any troubles or alarms. Conversely, wireless security devices or other hardwired security devices not powered by the DC power from the control unit will not be affected or activate the system if armed because they do not require DC power from the control unit to maintain their closed circuit (non-alarm) status.

While armed, a short circuit across either of the glass break or motion detector also caused the burglary siren to sound. Unlike when the system was not armed and the burglary keypad showed a fault on these alarms during the short, the burglary keypad showed an alarm for both the glass break and motion detectors during a short circuit to the burglary alarm devices while the system was armed. The security siren continued to sound until the alarms were cleared on the burglary keypad.

When the 32 FBPT was armed, a short to the fire keypad, burglary keypad, and V-Plex zone expander did not cause any sirens or short out any other devices, which are the same results as when the system was not armed.

For the household system, the results of the electrical short circuit testing on the Vista 20P combination-listed control unit indicate that it failed to comply with both UL and NFPA standards. The results of the short circuit testing on the Vista 20P can be seen in Table 3 below.

Vista 20P Electrical Short Circuit Testing					
Device Shorted	Time Momentary Short Circuit Created	What Equipment Lost Power	Time to System Restore/Keypad Reading	Central Station History	Results for Sustained Short Circuit Condition
4-Wire Smoke Detector	3:54	All listed in table, plus communicator	2 seconds for power restore to system, then keypad showed Fire Trouble 02, radio reconnected after 110 seconds	Z2 Fire Trouble – 15:55:39 Z803E33 Expander Module Reset – 15:55:45 Z2 Restore Fire Trouble – 15:56:18	Sustained short circuit condition rendered combination listed control unit non-functional and non-compliant with UL and NFPA standards
Motion Detector	3:58	All listed in table, plus communicator	2 seconds for power restore to system, then keypad showed Fire Trouble 02, radio reconnected after 110 seconds	None	Sustained short circuit condition rendered combination listed control unit non-functional and non-compliant with UL and NFPA standards
Glass Break Detector	4:03	All listed in table, plus communicator	2 seconds for power restore to system, then keypad showed Fire Trouble 02, radio reconnected after 110 seconds	None	Sustained short circuit condition rendered combination listed control unit non-functional and non-compliant with UL and NFPA standards
Receiver	4:07	All listed in table, plus communicator	2 seconds for power restore to system, then keypad showed Fire Trouble 02, radio reconnected after 110 seconds	None	Sustained short circuit condition rendered combination listed control unit non-functional and non-compliant with UL and NFPA standards
Keypad	4:14	All listed in table, plus communicator	2 seconds for power restore to system, then keypad showed Fire Trouble 02, radio reconnected after 110 seconds	Z2 Fire Trouble – 16:08:39 Z803E33 Expander Module Reset – 16:08:47 Z2 Restore Fire Trouble – 16:09:15	Sustained short circuit condition rendered combination listed control unit non-functional and non-compliant with UL and NFPA standards
Relay	4:11	All listed in table, plus communicator	2 seconds for power restore to system, then keypad showed Fire Trouble 02, radio reconnected after 110 seconds	None	Sustained short circuit condition rendered combination listed control unit non-functional and non-compliant with UL and NFPA standards

Table 3. Vista 20P electrical short circuit condition results.

For the Vista 20P combination-listed household control unit, a short circuit condition introduced across the power leads of any of this equipment instantly rendered the system non-functional. This finding is logical because, by design, the auxiliary power output final wiring terminations reside on the same positive and negative terminals that the single data-bus of the control unit reside on. Therefore, since all of the power and data-bus connected devices are required to be connected in parallel with each other, the introduction of a short circuit condition on any piece of equipment shut-downs every other piece of equipment that is part of the common wiring of the single data-bus. A short circuit condition applied to any fire or security device caused all equipment connected to the data-bus to lose power. This included the keypad, 4-wire smoke detector, wireless receiver, zone expansion module and radio alarm communicator. The wireless radio alarm transmitter did not have power for as long as the short circuit condition remained in place, meaning no alarms could be transmitted to the central station in the case of a fire emergency or any other alarm condition.

Introducing a sustained short and then removing the short circuit condition on the Vista 20P panel's data-bus demonstrated non-conformity to the applicable UL and NFPA 72® standards. While for a temporary short of 5 seconds or less the system was able to power back up normally, if the short circuit across any of the devices was sustained for longer than 10 seconds and then removed, power was not restored correctly to all of the shorted devices that were connected to the data-bus. Upon removal of the prolonged short, the keypad was able to power back on but then immediately proceeded to begin beeping and displaying "Check 100RF Receiver," "Check 103 Radio," and "Check 112 Relay Module." Upon further inspection, it was found that the output voltage from the data-bus to all connected devices was reduced by over half, from 13 volts to 5.25 volts. The low voltage condition is the cause of the checks on the keypad, and ergo the system still remains completely non-functional even when the short circuit is removed. None of the initiating detection devices were able to activate into an alarm condition at this voltage, and the radio remained non-functional. This means that even if a short circuit condition is momentary to one of these devices and then the short circuit condition is removed, the system remains non-operational if the short circuit on the data-bus lasted for more than just 10 seconds.

The only way to restore the system and get the output voltage to return to the correct value after this prolonged short circuit condition was to reset the system by unplugging the AC power and disconnecting the backup battery. Once this procedure occurred, the system returned to normal functionality and output voltage after the reset, but this voltage drop occurred every time any of the devices powered from the data-bus were shorted for longer than 10 seconds.

In contrast, for a temporary short of 5 seconds or less, the system was able to power back up within a couple of seconds once the short circuit condition was removed. Upon power being restored, there was a fire trouble on the keypad that could be cleared. The radio took approximately 110 seconds to reconnect to the central station. Once reconnected, the central station received a fire trouble/restore and a module reset for some of the short circuit tests. Whether a fire trouble/restore was received at the central station following power being restored, appeared to be based upon on how long the fire trouble displayed on the systems keypad before it was cleared. If the fire trouble was cleared immediately, the trouble/restore was never received at the central station upon the radio communicator reconnecting. If the fire trouble remained on the keypad for a short period of time before being cleared it did allow the trouble/restore to be received at the central station, but only once the short was removed and power was returned to the communicator.

It should be noted that there would never be a case where a short circuit condition created by fire melting wiring connected to the data-bus would not remain in a sustained condition. For all short circuit testing completed, if the wireless radio alarm transmitter lost power due to a short circuit on the data-bus, it remained without power and non-functioning until the short was removed and/or power was reset to the entire system. By design, the auxiliary power output final wiring terminations reside on the same positive and negative terminals that the single data-bus of the control unit reside on. Therefore, since all of the power and data-bus connected devices are required to be connected in parallel with each other, the introduction of a short circuit condition on any piece of equipment shut-downs every other piece of equipment that is part of the common wiring of the single data-bus.

Performing the short circuit testing for the Vista 20P with the system armed away and armed stay instead of non-armed yielded similar results to the non-armed tests. A short circuit across any device caused all other data-bus connected devices to lose power, including the wireless radio. The only difference for the 20P system when armed was that a short circuit to any device

caused the single siren for the system to sound with a burglary (non-T-3) alarm tone. In the case of a temporary short circuit of less than 5 seconds, the system restored back to full power, with an alarm for the glass break and motion detector zones showing on the keypad once the keypad restored. Once power was returned, the alarms on the keypad would be cleared and the siren would stop sounding.

For a sustained short circuit of longer than 10 seconds to any device on the 20P when armed, the system was not able to restore to full power once the short was removed. This behavior is the same as when the system was non-armed, except that the siren continued to sound from the time of the short circuit until power could be reset to the entire system by unplugging the panel and disconnecting the battery. In this case of a sustained short that is restored, the keypad is completely non-functional and there is no way to clear the burglar alarms.

The siren sounds during a short circuit condition when the system is armed because an alarm is triggered for the burglary detection devices at their corresponding hard-wired zones on the data-bus when power is lost to either of the motion or glass break detectors. If these detectors were wireless devices connected to a wireless receiver, the short circuit condition would not trigger an alarm and the siren would not sound in the case of a short circuit to any of the data-bus connected devices. If the short circuit condition is created by a fire when the system is armed, for instance a fire in a wall attacking the data-bus wiring, the siren will sound with a burglary alarm pattern instead of the T-3 fire pattern, giving no indication of a potential fire. Additionally, the wireless radio would not have power and no alarms could be transmitted to the central station. This behavior is not in conformance with the applicable UL and NFPA standards. In the case of this short circuit condition being sustained while the system is armed and the siren sounds, there is no way to stop the siren from sounding other than disconnecting all power from the system. This is also a dangerous condition as the entire system would now be unpowered and disabled.

The Vista 20P combination-listed system is non-functional during a short circuit to any connected fire and security devices due to all data-bus connected devices losing power during the short, including the wireless radio. This is true for when the system is both armed and non-armed, with the only difference being that the single siren for the system sounds while this short circuit is in place when the system was armed at the time of the short.

Upon completion of the testing, both systems remain connected as they were for the testing and are still installed on the plywood, just unpowered. The systems will remain in such a state for one year from the date of this report in case there is any need for further testing and/or inspection of the configuration setup. CSE will also contemplate any possible videotaped testing, similar to that performed by Mr. Zwirn, that visually demonstrate the results described herein. Finally, the central station history for all testing was saved via screenshots and is available upon request.

Discussion

As has been demonstrated in CSE's analysis and the experiments conducted, there is both scientific certainty and validity to Mr. Zwirn's hypothesized mode of failure for combination-listed single data-bus fire and burglar alarm control units, and they do not conform to UL and NFPA standards. Given that, from a Fire Protection Engineering perspective, this equipment is non-conforming, and it is dangerous to all persons who rely on it for mission critical functional and reliable life safety.

Regarding the commercial combination-listed system (Vista 32FBPT), it mostly performed as would be expected pursuant to UL and NFPA standards, yet for a control unit to "mostly" perform does not coincide with the requirements set forth in UL and NFPA standards. The verbiage "mostly performed" is applied due to the inclusion of the separately sold ECP isolator providing isolation on some devices from others. Nevertheless, a sustained short circuit introduced onto the wireless receiver caused the entire system to fail catastrophically which is considered a material violation of both UL and NFPA standards. Likewise, a sustained short circuit condition being introduced onto the power side of a hardwired 4-wire smoke detector also caused the entire system to fail catastrophically.

While the commercial system performed better than the household system, as will be described later in this section, there were still some issues with the performance of the commercial system that were concerning at best, and non-code-conforming at worst. Regarding the non-code conformance, this relates to a sustained short circuit condition being applied to the systems wireless receiver. In the setup utilized by CSE, the only device attached to the wireless receiver was a wireless smoke detector. However, CSE's assumption is that the overall majority of combination-listed control units that are installed and/or are going to be installed will more likely

than not always have both security and fire alarm components that are connected to the control unit. It is important to recall that NFPA 72® and UL 864 state the following for commercial systems respectively:

23.8.4.4.2 *If the equipment is attached to the fire alarm system via separate pathways, then short circuits or open circuits in this equipment, or between this equipment and the fire alarm system pathways, shall not impede or impair the monitoring for integrity of the fire alarm system or prevent alarm, supervisory, or fire safety control signal transmissions.*

56.1 *When a fire alarm system shares components, equipment, circuitry, and installation wiring with non-fire systems, short circuits, open circuits, or grounds in the non-fire system equipment or the connections between the non-fire system equipment and the fire alarm products shall not impair the required operation of the fire alarm system or prevent appropriate alarm, supervisory, or trouble annunciation and signaling, or unfaulted fire-safety control activation.*

If both fire and security wireless transmitters are configured to the wireless receiver, and a short circuit introduced onto the data-bus wiring causes the wireless receiver to instantly fail, this would violate 56.1 of UL 864. It would not violate NFPA 72® 23.8.4.4.2 as it is not attached via a separate pathway. But if only security devices were attached to the wireless receiver, a configuration that is allowed, this would violate 23.8.4.4.2 of NFPA 72® as it would now be a separate pathway and would still violate 56.1 of UL 864. Therefore, this is not code-conforming. As discussed previously, CSE can envision many scenarios where a fire could originate in a concealed wall space, in an attic or basement and compromise the common-wiring to the combination-listed control units' data-bus and/or its wiring by a short circuit condition being introduced onto the data-bus. In this scenario, this would render the entire system non-functional.

As a final point regarding the commercial system, it appears that the reason most of the system stayed functional during the introduction of a short circuit condition onto the data-bus was because of the presence of the ECP isolator. Despite this, the ECP isolator is apparently not a part of the basic Vista 32FBPT system when it is purchased. It is required to be ordered and installed separately. Additionally, the ECP isolator does not work on the Vista 20P residential system. As

a side note, the AFA installer technician indicated that he had never installed an ECP isolator previously and it was not his standard practice to do so. The use of an ECP isolator⁸ is necessary for the Vista 32FBPT combination-listed commercial fire and burglar alarm system to ensure some level of code compliance (though not complete compliance) for fire and security devices and protection from shorts as is required in accordance with UL and NFPA 72® standards. Accordingly, it must be included with the purchase of the combination-listed control unit and the instruction manuals and training materials should stress the importance of its use so that the system performs in accordance with its listing.

Regarding the household system (Vista 20P), CSE confirmed that a short circuit on any particular piece of equipment on the single data-bus's common wiring or fire or security equipment that is required to be connected to the data-bus wiring in parallel created a situation where the system instantly became non-functional. In this condition, the system has no ability for the siren(s) attached to the combination-listed control unit to audibly sound unless the system is armed and burglar devices are hardwired to control unit, where the siren still only sounds in a burglar (non-fire) tone. Additionally, none of the remote system keypads annunciated and the combination-listed control unit had no ability to transmit alarm signal(s) to the central station. This violates NFPA 72® as well as UL 985 and UL 1023. Faults, such as electrical short circuits, shall not interfere with the operability of the fire functions of the system. Yet, in Mr. Zwirn's videos, and confirmed in CSE's testing, an electrical short circuit does exactly that.

If the short is brief, the system is able to return to full functionality once the short clears. But if the short persists, even just more than 10 seconds, which would not be uncommon, it not only rendered the system non-functional, but the system remained non-functional even when the electrical short was cleared, and the only way to restore functionality to the system was to fully restart it by removing and reconnecting all power. This is particularly concerning, because consumers are not going to reset the system by unplugging it and disconnecting the battery, nor are they going to ever know that fire has attacked the data-bus. It should be noted that fire attacking the data-bus and/or its connected equipment and/or the data-bus wiring will create a sustained short

⁸ The ECP isolator is manufactured by Honeywell but is sold separately and will not work with the household Vista 20P combination listed control unit.

circuit condition because the insulation protecting the wiring will heat up and melt, causing the conductors to melt together.

After confirmation by CSE of the hypothesized failure in a combination-listed household fire and burglar alarm system with this independent testing, one must return to the UL letter where they explained and justified how they test household combination-listed systems for short circuits. This was shown previously as Figure 2 and Figure 3 and is included again below as Figure 10. The letter can also be seen in full in Appendix D. Numbering has been added in Figure 10 to facilitate discussion about several specific bullet points. Additionally, each bullet point is copied below and is subsequently addressed.

- Both Chapter 29 of NFPA 72, the National Fire Alarm and Signaling Code, and UL 985 stipulate that a wire to wire (short circuit) fault is to be applied only where non-fire alarm equipment is directly interconnected to the fire alarm system.
- 1 ○ UL 985, 6th edition published 2015 (Nov 2019 effective date) states:
 Section 41.3.1.3 *Short circuit or open circuit single faults in the non-fire equipment or in the wiring between the non-fire equipment and the fire alarm system shall not impede or impair the monitoring for integrity of the fire alarm system, nor impede or impair any fire alarm signal transmissions or operations.*
- Circuits interconnecting only fire alarm equipment are not required by UL 985 to be subjected to a short circuit fault. This includes your example of an attack by fire, specifically resulting in a short circuit fault on the data/power bus. Neither NFPA 72, Chapter 29, nor UL 985 include requirements with respect to household fire alarm system pathway survivability to attack by fire.
- 2
- Products/devices may additionally include security listing in addition to fire alarm listing when both fire and security signals can be processed by the product. An example includes zone expanders. These products connected directly to the communication/power bus are considered fire alarm products, even where only separate security devices are interconnected to them. In this instance the combination fire and security product/device is functioning as an isolation device. The device is isolating non-fire alarm listed devices from the communication/power bus. This alleviates the need to conduct a short circuit test on the communication/power bus.
- 3
- When non-fire alarm devices are directly connected to fire alarm listed devices/products, which are in turn connected to the communication bus, short circuit faults are applied directly to the non-fire alarm
- 4 devices and the interconnecting wiring to the fire alarm listed devices/products. Compliance is confirmed when the short circuit faults do not affect fire alarm and/or carbon monoxide alarm signaling operation.
- A short circuit fault is applied to the communication/power bus when non-fire alarm devices (for example when a system incorporates a Listed security only keypad or addressable PIR) are directly connected to the communication/power bus.
- 5
- A short circuit fault is also applied to output power supply circuits when non-fire alarm equipment is directly connected to those circuits. Typically, this includes security devices such as passive infrared motion sensors.
- 6

Figure 10. Portion of UL response letter dated 12/18/2020 regarding how UL indicates they apply Section 41.3.1.3 of the 6th edition of UL 985 (combination of previous Figure 2 and Figure 3).

- Both Chapter 29 of NFPA 72, the National Fire Alarm and Signaling Code, and UL 985 stipulate that a wire to wire (short circuit) fault is to be applied only where non-fire alarm equipment is directly interconnected to the fire alarm system.

- 1 ○ UL 985, 6th edition published 2015 (Nov 2019 effective date) states:
 Section 41.3.1.3 *Short circuit or open circuit single faults in the non-fire equipment or in the wiring between the non-fire equipment and the fire alarm system shall not impede or impair the monitoring for integrity of the fire alarm system, nor impede or impair any fire alarm signal transmissions or operations.*

In bullet point 1, UL concedes that a short in non-fire equipment shall not impair the fire functionality, though they then try to qualify their statement by mentioning that if only “directly interconnected” to the fire alarm system. As discussed previously, notably, this qualifier by UL is not included in the language of the UL standards. However, UL decided to change its standard language in response to Mr. Zwirn’s verified claims where it specifically states “common wiring”, and “directly interconnected” is not included in the plain language of UL standards. Accordingly, UL’s statements are erroneous. Nevertheless, CSE’s testing indicates that a short on non-fire equipment of a household combination-listed system impedes the fire alarm system’s operations and hence violates both UL and NFPA standards.

- Circuits interconnecting only fire alarm equipment are not required by UL 985 to be subjected to a short circuit fault. This includes your example of an attack by fire, specifically resulting in a short circuit fault on the data/power bus. Neither NFPA 72, Chapter 29, nor UL 985 include requirements with respect to
 2 household fire alarm system pathway survivability to attack by fire.

As a UL STP member, you are aware that you can submit a proposal to the appropriate UL STP(s) for their consideration to add such a requirement.

In bullet point 2, the statement by UL, that circuits interconnecting only fire alarm equipment are not required by UL 985 to be subjected to a short circuit fault, is not what the hypothesized failure mode was based upon. The next part of this bullet point states “This includes your example of an attack by fire, specifically resulting in a short circuit fault on the data/power bus.” Neither NFPA 72®, Chapter 29, nor UL 985 include requirements with respect to household fire alarm system pathway survivability to attack by fire. This does not address Mr. Zwirn’s now verified mode of failure.

- 3 • Products/devices may additionally include security listing in addition to fire alarm listing when both fire and security signals can be processed by the product. An example includes zone expanders. These products connected directly to the communication/power bus are considered fire alarm products, even where only separate security devices are interconnected to them. In this instance the combination fire and security product/device is functioning as an isolation device. The device is isolating non-fire alarm listed devices from the communication/power bus. This alleviates the need to conduct a short circuit test on the communication/power bus.

In bullet point 3 of UL's letter, UL is indicating that dual security and fire listed devices are only considered fire alarm products even if security devices are connected to them because they are behaving as an isolation device. This is false and there is no isolation that occurs between the zone expansion module and its required interconnection to the data-bus since a short circuit condition that is introduced onto the data-bus wiring, such as a zone-expansion module, instantly shuts down the combination-listed control unit.

- 4 • When non-fire alarm devices are directly connected to fire alarm listed devices/products, which are in turn connected to the communication bus, short circuit faults are applied directly to the non-fire alarm

devices and the interconnecting wiring to the fire alarm listed devices/products. Compliance is confirmed when the short circuit faults do not affect fire alarm and/or carbon monoxide alarm signaling operation.

In bullet point 4 of UL's letter it states "When non-fire alarm devices are directly connected to fire alarm listed devices/products, which are in turn connected to the communication bus, short circuit faults are applied directly to the non-fire alarm devices and the interconnecting wiring to the fire alarm listed devices/products. Compliance is confirmed when the short circuit faults do not affect fire alarm and/or carbon monoxide alarm signaling operation." In contrast, CSE has demonstrated and verified that compliance could not have been technically confirmed due to the single data-bus method and its requirements to connect all data-bus connected devices in parallel with each other and due to where final power wiring terminations are required to reside on the same terminals of the control unit.

- 5 • A short circuit fault is applied to the communication/power bus when non-fire alarm devices (for example when a system incorporates a Listed security only keypad or addressable PIR) are directly connected to the communication/power bus.

A short circuit fault condition applied to the data-bus will instantly render the control unit non-functional. Accordingly, this equates to a non-conforming combination-listed control unit. The claim by UL that this is tested is inconsistent with the testing of CSE where a short circuit applied to the data-bus wiring instantly caused the control unit to fail catastrophically.

- 6 • A short circuit fault is also applied to output power supply circuits when non-fire alarm equipment is directly connected to those circuits. Typically, this includes security devices such as passive infrared motion sensors.

The technical results of CSE's testing and the results of Mr. Zwirn's testing demonstrate that this cannot be an accurate representation by UL. The auxiliary DC power output of the system is required to be connected to the combination-listed control unit at only one location on the systems circuit board. The same holds true for the positive (+) and negative (-) terminals, which reside on the same DC power output terminals that are where the data-bus power connection is required to occur. Consequently, when a short was applied to a motion detector or glass break detector connected to the residential Vista 20P data-bus wiring, the entire control unit catastrophically failed.

As elaborated to in this report, in CSE's testing results, a motion detector and audio glass break detector were connected to a Honeywell Vista-20P control unit and when a short-circuit condition was introduced onto the data-bus it instantly rendered the entire system non-functional. The best evidence to test if the combination-listed control unit is conforming to UL and NFPA standards, is not to just posit it, but it is to scientifically and technically test it. CSE performed said testing which leads to our conclusion that the control units are non-conforming. The system installed at CSE has a motion sensor and glass break detector attached to the system just as any customer would, and a short at this equipment rendered the entire system non-functional.

Based on the totality of results, it is clear the NRTLs are not appropriately testing the combination-listed control units to UL standards and NFPA 72®, so that short circuits in non-fire equipment do not impede the ability of the fire alarm system to respond to fire emergencies. Of equal importance is the presence of combination-listed control units that have already been manufactured and installed in the field that are currently non-conforming. This non-compliance

has been confirmed in CSE's testing whereby a combination-listed system was simply purchased and installed just like any alarm contractor would do for an ordinary consumer, and it does not meet the plain language requirements of the applicable NFPA and UL standards. This indicates that there are combination-listed fire and burglar alarm systems present in the field across the country that do not meet the requirements of the applicable UL and NFPA standards.

SUMMARY OF OPINIONS

Based on the review of the applicable materials, the analysis of codes and standards, as well as the scientific testing conducted by CSE and others, as well as our specialized education, skill, knowledge, training, experience and credentials, CSE has the following expert opinions:

- It has been hypothesized that a short circuit in a non-fire protection device attached to a common data-bus and its wiring can cause a failure of the entire fire alarm system. The hypothesized failure mode of the data-bus in commercial combination-listed burglar and fire alarm systems was confirmed for Honeywell's Vista 32FBPT. A short circuit condition in the wireless receiver of this system caused the entire system to catastrophically fail. This violates both UL and NFPA standards.
- An electrical short circuit condition that was introduced onto the (+) and (-) power feeding a 4-wire smoke detector on the commercial Vista 32FBPT caused not only the smoke detector to become non-functional, but it also caused the entire system to catastrophically fail.
- The use of the ECP isolator on the Honeywell Vista 32FBPT mostly protected much of the system from short circuit failure. Nevertheless, an ECP isolator is not included in the purchase of this control unit, and it did not isolate the systems wireless receiver or a 4-wire smoke detector that was connected to this control unit as part of the CSE testing.
- The failure of the wireless receiver on the commercial Vista 32FBPT violates UL 864 directly. Additionally, it violates NFPA 72®, particularly since only security devices could be connected wirelessly to the wireless receiver.

- CSE’s electrical short circuit testing on the single data-bus and/or on the data-bus wiring and/or on any of the data-bus connected devices using the Honeywell Vista 20P household combination-listed control unit caused the entire system to catastrophically fail.
- The fact that shorts on most or all pieces of equipment on CSE’s testing of the Honeywell Vista 20P combination-listed system caused the entire system to fail catastrophically directly violates both NFPA 72® and UL 985 Standards.
- The testing in this project confirms the previous testing by Mr. Zwirn of different manufacturers control units including the Honeywell Vista control units that were tested by CSE.
- The catastrophic failure of the Vista 20P was further complicated by the fact that if the short persisted for more than 10 seconds, the system did not restore properly upon removal of the short and required a full reboot by removing AC power and unplugging the battery. This could cause the system to remain non-functional for a significant period of time until a technician can visit the residence. This would also be the situation if the system failed due to fire exposure in a wall.
- The CSE testing of the Vista 20P residential system indicates that, for some reason, UL is getting very different results than that demonstrated by Mr. Zwirn in his videos and expert report and scientifically identified and confirmed in this current testing series. The testing by UL is not ensuring compliance with the applicable NFPA and UL standards.
- The results of the testing herein are not solely attributable to Honeywell systems. Mr. Zwirn has indicated in his videotaped testing that many other listed systems have similar issues. Therefore, there may be many systems currently installed that suffer from these same non-conformity dangers.

REFERENCES

Ahrens, M. and Maheshwari, R. Home Structure Fires. NFPA Research Report. 2021.

Ahrens, M. Smoke Alarms in US Home Fires. NFPA Research Report. 2021.

National Fire Protection Association (NFPA) Codefinder, search for “72”, accessed 2/21/2022.

National Fire Protection Association (NFPA) Standard 70. National Electric Code. 2020 edition.

National Fire Protection Association (NFPA) Standard 72®. National Fire Alarm and Signaling Code®. 2022 edition.

National Fire Protection Association (NFPA) Standard 72®. National Fire Alarm and Signaling Code®. 2019 edition.

National Fire Protection Association (NFPA) Standard 72®. National Fire Alarm and Signaling Code®. 2016 edition.

National Fire Protection Association (NFPA) Standard 72®. National Fire Alarm and Signaling Code®. 2013 edition.

National Fire Protection Association (NFPA) Standard 72®. National Fire Alarm and Signaling Code®. 2010 edition.

National Fire Protection Association (NFPA) Standard 72®. National Fire Alarm Code®. 2007 edition.

National Fire Protection Association (NFPA) Standard 72®. National Fire Alarm Code®. 2002 edition.

National Fire Protection Association (NFPA) Standard 72®. National Fire Alarm Code®. 1999 edition.

National Fire Protection Association (NFPA) Standard 72®. National Fire Alarm Code®. 1996 edition.

National Fire Protection Association (NFPA) Standard 72®. National Fire Alarm Code®. 1993 edition.

National Fire Protection Association (NFPA) Standard 921. Guide for Fire and Explosion Investigations. 2021 edition.

Underwriters Laboratories (UL) Standard 365. Police Station Connected Burglar Alarm Units and Systems. 4th edition. 1997. With changes through 07/17/2010.

Underwriters Laboratories (UL) Standard 365. Police Station Connected Burglar Alarm Units and Systems. 5th edition. 2018.

Underwriters Laboratories (UL) Standard 864. Control Units and Accessories for Fire Alarm Systems. 9th edition. 2003. With changes through 08/31/2012.

Underwriters Laboratories (UL) Standard 864. Control Units and Accessories for Fire Alarm Systems. 10th edition. 2014. With changes through 03/29/2018.

Underwriters Laboratories (UL) Standard 985. Household Fire Warning System Units. 5th edition. 2000. With changes through 10/31/2008.

Underwriters Laboratories (UL) Standard 985. Household Fire Warning System Units. 6th edition. 2015. With changes through 07/12/2018.

Underwriters Laboratories (UL) Standard 1023. Household Burglar-Alarm System Units. 6th edition. 1996. With changes through 07/01/2013.

Underwriters Laboratories (UL) Standard 1023. Household Burglar-Alarm System Units. 7th edition. 2017.

Appendix A

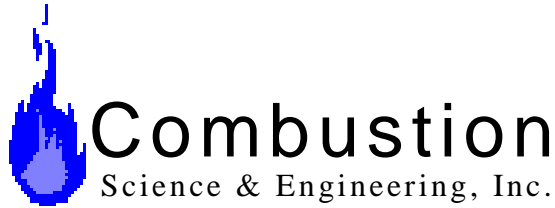
List of Reviewed Materials

- YouTube videos from “The Alarm Panel Recall Channel”, various dates
- YouTube webinar by Kirschenbaum & Kirschenbaum, Attorneys at Law, dated 2/16/2021
- Expert report of Jeffrey D. Zwirn, says “Combustion Science & Engineering, Incorporated” in the footer, dated 2/14/2022
- Expert report of Jeffrey D. Zwirn, says “To: Mr. Dale R. Wheeler, PE, Principal, Systech Fire Protection, LLC” in the footer, dated 2019
- UL Letter of Larry Shudak to Jeffrey Zwirn, dated 12/18/2020
- CV of Merton W. Bunker, no date
- Peer-review letter of Merton Bunker, dated 9/9/2019
- Peer-review letter of Merton W. Bunker, dated 1/21/2021
- Annex A – Merton Bunker publication, no date
- Annex 1 – Applicable Sections of NFPA 72® and UL Standards, no date
- “Zwirn responds to Johnson Controls letter” video link, dated 4/12/2021
- “Johnson Controls Violates 6th Edition of UL-985 as Described by Intertek” with link to PDF, dated 4/12/2021
- David A. Forkner letter to Jonathan S. Goodgold and Jeffrey D. Zwirn, dated 3/30/2021
- “Johnson Controls Employee Confirms Non-Conformity”, dated 4/12/2021
- David A. Forkner letter to Robert J. Cosgrove and Matthew C. Care, dated 4/28/2021
- Robert J. Cosgrove and Matthew C. Care letter to David A. Forkner, dated 4/12/2021
- ADI catalog page with Honeywell Home Intrusion devices, no date
- NFPA Technical Question from Jeffrey Zwirn, dated 9/17/2021 and response from NFPA (Christopher Coache), dated 9/21/2021
- Honeywell Ademco VISTA-20P Series/VISTA-15P Series Security Systems Quick Installation Guide, dated 3/15 (Rev C)
- NFPA Technical Question response of Richard Roux dated 4/6/2021 to a question submitted by Jeffrey Zwirn dated 3/31/2021
- Equipment Manufacturers Specifications Honeywell Vista 20P
- Equipment Manufacturers Specifications Honeywell Vista 32FBPT
- Honeywell catalog cutsheet for Ademco Commercial Wireless Receiver, no date

- CV of Jeffrey Zwirn
- Letter report of Zygmunt Staszewski, PE, FSFPE, ZS Engineering DPC, dated 5/1/2022

Appendix B

Curriculum Vitae and Lists of Publications



8940 Old Annapolis Road • Suite L • Columbia • MD • 21045 -2129 • Tel: 410 / 884-3266 • Fax: 410 / 884-3267

STEPHEN M. OLENICK, MSFPE, MBA, P.E., CFEI

EDUCATION:

B.S., Fire Protection Engineering, University of Maryland, College Park, MD, May 1998
M.S., Fire Protection Engineering, University of Maryland, College Park, MD, December 1999
M.B.A., Loyola University, Baltimore, MD, December 2011

THESIS:

Olenick, S.M., "Validation of the Forced Flow Ignition and Flame Spread Test (FIST), A Reduced Scale Test Apparatus, to Assess Material Flammability for Micro-Gravity Environments," University of Maryland, College Park, Maryland, December 1999.

PROFESSIONAL EXPERIENCE:

Principal Engineer, Combustion Science & Engineering, Inc., Columbia, MD, 2011-present.

Responsible for conducting fire investigations and fire hazards analysis, providing fire litigation support, and utilizing computer fire modeling including both zone models and computational fluid dynamics (CFD). Litigation experience includes both criminal and civil cases involving residential, commercial, and industrial fires. Conducted various site fire investigations that cover a wide range of structural settings including residential, commercial, and industrial facilities. Performed model validation of both zone and CFD models to determine error limits and accuracy of models in various scenarios. Participated in numerous projects funded by government grants (NASA, NIST, etc.) to determine methodologies for modeling smoke detector activation. Responsible for providing leadership and managerial duties on numerous computational and experimental projects, as well as overseeing and reviewing many computational simulations.

Senior Engineer, Combustion Science & Engineering, Inc., Columbia, MD, 2005-2011.

Project Engineer, Combustion Science & Engineering, Inc., Columbia, MD, 2000-2005.

Graduate Research Assistant, University of Maryland, College Park, MD, 1998-1999.

Responsible for design, construction, and operation of the FIST apparatus to characterize the combustion of solid materials in micro-gravity. Funded by NASA and conducted under the supervision of Professor Dr. Jose Torero.

Undergraduate Research Assistant, University of Maryland, College Park, MD, 1997-1998

Responsible for investigating the effect of weathering on the flash point of crude oil. Funded by NIST and conducted under the supervision of Professor Dr. Jose Torero and graduate student Neil Wu.

PROFESSIONAL REGISTRATION:

Registered Professional Engineer (Fire Protection), State of Delaware, No. 13131
Certified Fire and Explosion Investigator (CFEI), National Association of Fire Investigators, No. 7461-4946

HONORS:

Fire Technology Jack Watts Award for Outstanding Reviewer, 2017
National Fire Protection Research Foundation William M. Carey Award for best presentation, SUPDET, 2007
NFPA Harry C. Bigglestone Award for Excellence in Communication of Fire Protection Concepts, 2005.

PROFESSIONAL STANDING:

Memberships:

Member, Salamander Honorary Fire Protection Engineering Society, Beta Chapter
Member, Society of Fire Protection Engineers (SFPE)
Member, National Fire Protection Association (NFPA)
Member, International Association of Arson Investigators (IAAI)
Member, National Association of Fire Investigators (NAFI)
Member, International Association of Fire Safety Science (IAFSS)

Committees:

Chair, Standard for the Installation of Fuel Gases Detection and Warning Equipment (NFPA 715) Technical Committee on Fuel Gases Warning Systems, 2019-present
Principal, National Fire Alarm and Signaling Code (NFPA 72) Technical Committee on Single- and Multiple-Station Alarms and Household Fire Alarm Systems (SIG-HOU), 2005-present
Principal, Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment (NFPA 720) Technical Committee on Carbon Monoxide Detection, 2012-2017
Member, SFPE Task Group on Computer Model Evaluation, 2000-2010

Journals and Conferences:

Editorial Board, *Fire Technology*, 2016-present
Guest Editor for Special Section on Detection for *Fire Technology*, 2010 (v.46, n.3)
Member, Programme Committee, National Fire Protection Research Foundation SUPDET, 2008
Reviewer, *Fire Technology*
Reviewer, *Fire Safety Journal*
Reviewer, *Fire & Materials*
Reviewer, IAFSS *International Symposium on Fire Safety Science*

SELECTED PRESENTATIONS AND PUBLICATIONS:

Presentations:

Olenick, S., Klassen, M., and Boehmer, H., “Changing Hazards of Modern Vehicles in Parking Structures”, NFPA 125th Anniversary Conference Series, November 2021.

Olenick, S.M., “NFPA 715 – Standard for the Installation of Fuel Gases Detection and Warning Equipment: Where We’ve Been, Where We Are, and Where We’re Going”, National Electrical Manufacturers Association (NEMA) SB/SB2 Industry Day, October, 2021.

Klassen, M., Olenick, S., and Boehmer, H., “Modern Vehicle Hazards in Parking Structures and Vehicle Carriers”, SFPE Annual Conference & Expo, Baltimore, Maryland, October, 2021.

Davis, S.G. and Olenick, S.M., “Combustible Gas Dispersion and Detector Location Analysis in Residential Occupancies”, NFPA webinar, March, 2021.

Boehmer, H., Klassen, M., and Olenick, S., “Modern Vehicle Hazards in Parking Structures and Vehicle Carriers”, International Conference on Fire in Vehicles (FIVE), December, 2020.

Boehmer, H., Klassen, M., and Olenick, S., “Parking Structures and Life Safety: Keeping Pace With Modern Vehicle Hazards”, presentation to the NFPA 88A Technical Committee, October, 2020.

Olenick, S.M., Boehmer, H., and Klassen, M.S., "Door Messaging Strategies: Implications for Detection and Notification", NFPA Fire Protection Research Foundation Suppression, Detection and Signaling Research and Applications Symposium (SUPDET), September, 2019.

Olenick, S.M., Boehmer, H.R., and Klassen, M.S., “Door Messaging Strategies - Researching the Options”, NFPA Research Foundation Door Messaging Strategies Workshop, July, 2019.

Olenick, S.M., Boehmer, H.R., and Klassen, M.S., “Door Messaging Strategies - Researching the Options”, NFPA Conference & Expo, San Antonio, June, 2019.

Martin, G., Boehmer, H.R., and Olenick, S.M., "Thermally-Induced Failure of Smoke Alarms", presented at the 16th International Conference on Automatic Fire Detection (AUBE '17) and the National Fire Protection Association Research Foundation’s Suppression, Detection and Signaling Research and Applications Symposium (SUPDET 2017) joint conference, September, 2017.

Martin, G., Boehmer, H.R., and Olenick, S.M., “Thermally-Induced Failure of Smoke Alarms”, IAFSS 12th International Symposium on Fire Safety Science, June, 2017. (poster presentation)

Olenick, S.M., Roby, R.J., Carpenter, D.J., and Goodman, A., "Evaluation of the NFPA 72 Spacing Requirements for Waffle Ceilings", National Fire Protection Research Foundation Suppression and Detection Research and Applications Symposium (SUPDET 2008), Orlando, Florida, March 2008.

McAllister, J. and Olenick, S.M., “Smoke Detection Systems, Fire Modeling, and Fire Toxicology: Useful Tools in Fire Investigation and Reconstruction,” Cozen O’Connor Continuing Legal Education seminar, April, 2007.

Sutula, J., Klassen, M., Roby, R., Olenick, S., Gaines, G. and Torero, J., “Flame Extinction Based on a Critical Damköhler Number for the Assessment of Suppression Effectiveness in Reduced Gravity Environments,” Presented at the 5th International Seminar on Fire and Explosion Hazards, Edinburgh, Scotland, April 23-27, 2007.

Milarcik, E.L, Olenick, S.M., and Roby, R.J., “An Analysis of the Performance of Residential Smoke Detection Technologies Utilizing the Concept of Relative Time,” presented to the National Fire Protection Research Foundation Suppression and Detection Research and Applications Symposium (SUPDET), March, 2007. (2007 Carey award)

Olenick, S.M., Roby, R.J., Klassen, M.S., Zhang, W., Sutula, J.A., Worrell, C., Wu, D., D'Souza, V., Ashley, A., Dubois, J., Torero, J.L., and Streit, L., "The Role of Smoke Detectors in Forensic Fire Investigation and Reconstruction," presented to the International Symposium on Fire Investigation Science and Technology (ISFI), June 26-28, 2006.

Sutula, J.A., Klassen, M.S., Roby, R.J., Olenick, S.M., Gaines, G., Chakraborty, A., and Torero, J.L., “Development of an Engineering Tool for Determination of Suppression Device Placement in Reduced Gravity Environments” Habitation 2006 Conference, Orlando, February, 2006.

Gaines, G., Roby, R., Klassen, M., Zhang, W., Olenick, S., and Torero, J., "An Algorithm to Predict Smoke Detector Activation in a Forced Flow Microgravity Environment" Habitation 2006 Conference, Orlando, February, 2006.

Ma, T., Olenick, S.M., Klassen, M.S., Roby, R.J., and Torero, J.L., "Carpet Under Fire: A Forensic View on the Role of Carpet (Porous Media) in Liquid Spill Fires", Harry C. Bigglestone Award Presentation, NFPA World Safety Conference and Exposition, Las Vegas, June, 2005.

Olenick, S.M., Zhang, W., Carpenter, D. J., Roby, R. J., and Klassen, S. M., "Verification and Validation of a Smoke Detector Activation Algorithm for the Fire Dynamics Simulator (FDS)", presented to the NFPA Fire Protection Research Foundation Fire Suppression and Detection Research Application Symposium, Orlando, January, 2005.

Stephen M. Olenick, Noah L. Ryder, and Jason A. Sutula, "Computer Modeling of a Controlled Full Scale House Burn with Fire Dynamics Simulator: Construction of a Complex Geometry and Comparison of Predictions with Experimental Data," presented to the NFPA World Safety Conference and Exposition, Dallas, May, 2003.

Stephen M. Olenick, Jason A. Sutula, Richard J. Roby, and Vijay T. D'Souza, "Modeling of Smoke Detector and Sprinkler Activation," presented to the NFPA Fire Protection Research Foundation's Fire Suppression and Detection Research Application Symposium; January, 2003.

Vijay T. D'Souza, Jason A. Sutula, Stephen M. Olenick, Wei Zhang, and Richard J. Roby, "Predicting Smoke Detector Activation using the Fire Dynamics Simulator," presented to the IAFSS 7th International Symposium on Fire Safety Science, June, 2002.

Maclain M. Holton, Stephen M. Olenick, Michael S. Klassen, and Richard J. Roby, "A Study of the Effectiveness of Passive Infrared Burglar Alarms to Detect Fires and Smoke," presented to The NFPA Fire Protection Research Foundation: Fire Suppression and Detection Research Application Symposium, Tampa, FL, January, 2002.

Stephen M. Olenick, Michael S. Klassen, and Richard J. Roby, "Validation Study of FDS for a High-Rack Storage Fire Involving Pool Chemicals," presented to the NFPA 430 (Storage of Liquid and Solid Oxidizers) Technical Task Group, January, 2002.

Vijay T. D'Souza, Jason A. Sutula, Stephen M. Olenick, Wei Zhang, and Richard J. Roby, "Use of the Fire Dynamics Simulator to Predict Smoke Detector Activation," presented to the Fall Technical Meeting of the Eastern States Section of the Combustion Institute, December, 2001.

Sutula, J. A., and Olenick, S. M., "The Fire Protection Engineering Consultant," presented to the University of Maryland College Park Department of Fire Protection Engineering Course "ENFP 108: Hot Topics in Fire" as guest lecturers, October, 2001.

Stephen M. Olenick, Michael S. Klassen, and Richard J. Roby, "Validation Study of FDS for a High-Rack Storage Fire Involving Pool Chemicals," presented to the SFPE 3rd Technical Symposium on Computer Applications in Fire Protection Engineering, September, 2001.

S. Olenick, J. Sutula, and J. DuBois, "Practical Applications of Computer Modeling in Combustion Engineering Consulting," presented to the Chesapeake Chapter of the Society of Fire Protection Engineers (SFPE), February 2001.

S. Olenick, J. Sutula, and J. DuBois, "Practical Applications of Computer Modeling in Combustion Engineering Consulting," presented to the University of Maryland Student Chapter of the Society of Fire Protection Engineers (SFPE), October 2000.

T. Steinhaus, S. M. Olenick, A. Sifuentes, R. T. Long and J. L. Torero, "A Method for Assessing Material Flammability for Micro-Gravity Environments," presented to the Joint Meeting of the United States Sections, The Combustion Institute, Washington, D.C., March 1999.

Publications:

Boehmer, H.R., Klassen, M.S. and Olenick, S.M., "Fire Hazard Analysis of Modern Vehicles in Parking Facilities", *Fire Technology*, v57, n5, 2021. <https://doi.org/10.1007/s10694-021-01113-1>

Boehmer, H., Klassen, M., and Olenick, S., "Modern Vehicle Hazards in Parking Structures and Vehicle Carriers", Proceedings of the International Conference on Fire in Vehicles (FIVE), December, 2020.

Olenick, S.M., Boehmer, H.R., and Klassen, M.S., "Door Messaging Strategies: Implications for Detection and Notification," *Fire Technology*, 2020, online first. <https://doi.org/10.1007/s10694-020-01049-y>.

Boehmer, H., Klassen, M., and Olenick, S. Modern Vehicle Hazards in Parking Structures and Vehicle Carriers. NFPA Fire Protection Research Foundation report FPRF-2020-07. July, 2020. <https://www.nfpa.org/News-and-Research/Data-research-and-tools/Building-and-Life-Safety/Modern-Vehicle-Hazards-in-Parking-Garages-Vehicle-Carriers>

Olenick, S.M., Boehmer, H., and Klassen, M.S. Door Messaging Strategies: Implications for Detection and Notification. NFPA Fire Protection Research Foundation report FPRF-2019-12. October 2019. <https://www.nfpa.org/News-and-Research/Data-research-and-tools/Detection-and-Signaling/Door-Messaging-Strategies-Implications-for-Detection-and-Notification>

Olenick, S.M., Boehmer, H., and Klassen, M.S., "Door Messaging Strategies: Implications for Detection and Notification". Extended Abstract. Proceedings of the NFPA Fire Protection Research Foundation Suppression, Detection and Signaling Research and Applications Symposium (SUPDET), 2019.

Martin, G., Boehmer, H., and Olenick, S.M., "Thermally-Induced Failure of Smoke Alarms," *Fire Technology*, v52, n2, 2020. <https://doi.org/10.1007/s10694-019-00898-6> including erratum (<https://doi.org/10.1007/s10694-019-00913-w>). Added to *Fire Technology* Editors' Choice Topical Collection for having special significance.

Havey, P., Munoz, M., Klassen, M.S., Holton, M.M., and Olenick, S.M., "Variability and Error Rates in Fire Alarm Audibility Measurements and Calculations," *Fire Technology*, v54, n6, 2018. <https://doi.org/10.1007/s10694-018-0755-6>.

Havey, P., Jaquay, J.T., Holton, M.M., Hussain, N. and Olenick, S.M., "Persistence of Sonic Deposition on Smoke Alarms in Forensic Fire Investigations," *Fire Technology*, v54, n6, 2018. <https://doi.org/10.1007/s10694-018-0761-8>

Martin, G., Boehmer, H.R., and Olenick, S.M., "Thermally-Induced Failure of Smoke Alarms", Proceedings of the 16th International Conference on Automatic Fire Detection (AUBE '17) and the National Fire Protection Association Research Foundation's Suppression, Detection and Signaling Research and Applications Symposium (SUPDET 2017) joint conference, 2017.

Olenick, S.M., Roby, R.J., and Carpenter, D.J., "Re-Visiting the Michael Ledford Fire Incident" Proceedings of the International Symposium on Fire Investigation Science and Technology (ISFI), 2010.

Olenick S.M., Klassen, M.S., Roby, R.J., Ma, T., and Torero, J.L., "The Behavior of Liquid Fuel on Carpet (Porous Media): A Case for the Inclusion of Science in Fire Investigation", *Fire Technology* (Special Issue: Bigglestone Award – A 25th Anniversary Retrospective), v.46, n4, 2010.

Olenick, S.M. "Guest Editorial: Special Section on Detection", *Fire Technology*, v.46, n3, 2010.

Milarcik, E.L, Olenick, S.M., and Roby, R.J., "A Relative Time Analysis of the Performance of Residential Smoke Detection Technologies" *Fire Technology*, v. 44, n.4, 2008.

Olenick, S.M., Roby, R.J., Carpenter, D.J., and Goodman, A., "Evaluation of the NFPA 72 Spacing Requirements for Waffle Ceilings", Proceedings of the National Fire Protection Research Foundation Suppression and Detection Research and Applications Symposium (SUPDET 2008), 2008.

Zhang, W., Olenick, S.M., Klassen, M.S., Carpenter, D.J., Roby, R.J., and Torero, J.L., "A Smoke Detector Activation Algorithm for Large Eddy Simulation Fire Modeling," *Fire Safety Journal*, v.43, n.2, 2008.

Roby, R.J., Olenick, S.M., Zhang, W., Carpenter, D.J., Klassen, M.S., and Torero, J.L. A Smoke Detector Algorithm for Large Eddy Simulation Modeling. NIST GCR 07-911, July, 2007.

Milarcik, E.L, Olenick, S.M., and Roby, R.J., "An Analysis of the Performance of Residential Smoke Detection Technologies Utilizing the Concept of Relative Time," Proceedings of the National Fire Protection Research Foundation Suppression and Detection Research and Applications Symposium (SUPDET), 2007. (2007 Carey award)

Sutula, J., Klassen, M., Roby, R., Olenick, S., Gaines, G. and Torero, J., "Flame Extinction Based on a Critical Damköhler Number for the Assessment of Suppression Effectiveness in Reduced Gravity Environments," proceedings of the 5th International Seminar on Fire and Explosion Hazards, Edinburgh, Scotland, April 23-27, 2007.

Olenick, S.M., Roby, R.J., Klassen, M.S., Zhang, W., Sutula, J.A., Worrell, C., Wu, D., D'Souza, V., Ashley, A., Dubois, J., Torero, J.L., and Streit, L., "The Role of Smoke Detectors in Forensic Fire Investigation and Reconstruction," Proceedings of the International Symposium on Fire Investigation Science and Technology (ISFI), 2006.

Spearpoint, M., Olenick, S. M., Torero, J. L., and Steinhaus, T., "Ignition Performance of New and Used Motor Vehicle Upholstery Fabrics", *Fire and Materials*, v. 29, n. 5, 2005.

Ma, T., Olenick, S. M., Klassen, M. S., Roby, R. J., and Torero, J. L., "Burning Rate of Liquid Fuel on Carpet (Porous Media)", *Fire Technology*, 40, 2004. (2005 Bigglestone Award)

Roby, R.J., W. Zhang, G.C. Gaines, S.M. Olenick, M.S. Klassen, and J.L. Torero, "The Integration of a Smoke Detector Model with Large Eddy Simulation Fire Modeling for Predicting Smoke Detector Activation in Microgravity," Proceedings of Strategic Research to Enable NASA's Exploration Missions Conference and Workshop Poster Session, June, 2004.

J.L. Torero, S.M. Olenick, J.P. Garo and J.P. Vantelon, "Determination of the Burning Characteristics of a Slick of Oil on Water", *Spill Science and Technology Bulletin*, v.8, 4, 2003.

Stephen M Olenick and Douglas J. Carpenter, "An Updated International Survey of Computer Models for Fire and Smoke," *SFPE Journal of Fire Protection Engineering*, v. 13, n. 2, 2003.

Vijay T. D'Souza, Jason A. Sutula, Stephen M. Olenick, Wei Zhang, and Richard J. Roby, "Predicting Smoke Detector Activation using the Fire Dynamics Simulator," Proceedings of the IAFSS 7th International Symposium on Fire Safety Science, 2002.

Maclain M. Holton, Stephen M. Olenick, Michael S. Klassen, and Richard J. Roby, "A Study of the Effectiveness of Passive Infrared Burglar Alarms to Detect Fires and Smoke," Proceedings of The Fire Protection Research Foundation: The Fire Suppression and Detection Research Application Symposium, Tampa, FL, January, 2002.

Vijay T. D'Souza, Jason A. Sutula, Stephen M. Olenick, Wei Zhang, and Richard J. Roby, "Use of the Fire Dynamics Simulator to Predict Smoke Detector Activation," Proceedings of the Fall Technical Meeting of the Eastern States Section of the Combustion Institute, December, 2001.

M. Roslon, S. Olenick, Y. Y. Zhou, D. C. Walther, J.L. Torero, A.C. Fernandez-Pello and H. D. Ross, "Micro-Gravity Ignition Delay of Solid Fuels in Low Velocity Flows," *AIAA-Journal*, v. 39, n. 12, December, 2001.

Stephen M. Olenick, Michael S. Klassen, and Richard J. Roby, "Validation Study of FDS for a High-Rack Storage Fire Involving Pool Chemicals," Final Proceedings, SFPE 3rd Technical Symposium on Computer Applications in Fire Protection Engineering, September, 2001.

N. Wu, T. Mosman, S. M. Olenick and J. L. Torero, "The Effect of Weathering on Piloted Ignition and Flash Point of a Slick of Oil," *Spill Science and Technology Bulletin*, (submitted).

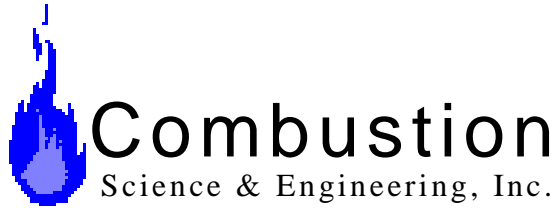
M. Roslon, S. Olenick, D. Walther, J.L. Torero, A.C. Fernandez-Pello and H. Ross "Microgravity Ignition Delay of Solid Fuels in Low Velocity Flows," Proceedings of the Spring Meeting of the Western States Sections, The Combustion Institute, Boulder, Colorado, March 2000.

M. Roslon, S. Olenick, D. C. Walther, J. L. Torero, A. C. Fernandez-Pello and H. D. Ross, "Flow Effects on the Micro-Gravity Ignition Delay of Solid Fuels," 38th *AIAA Aerospace Science Meeting*, Reno, Nevada, January, 2000.

S. Olenick, M. Roslon, D. Walther, J. L. Torero, A.C. Fernandez-Pello and H. Ross, "Flow Effects on the Microgravity Piloted Ignition Delay of Solid Fuels" Proceedings of the International Seminar on Microgravity Combustion, Institute of Fluid Science, Tohoku University, Sendai, Japan, August, pp 172-181, 1999.

T. Steinhaus, S. M. Olenick, A. Sifuentes, R. T. Long and J. L. Torero, "A Method for Assessing Material Flammability for Micro-Gravity Environments," Proceedings of the Joint Meeting of the United States Sections, The Combustion Institute, Washington, D.C., March 1999.

N. Wu, T. Mosman, S. M. Olenick and J. L. Torero, "The Effect of Weathering on Piloted Ignition and Flash Point of a Slick of Oil," 21st *Arctic and Marine Oil Spill Program (AMOP) Technical Seminar*, Edmonton, Canada, vol.2, June 1998.



8940 Old Annapolis Road • Suite L • Columbia • MD • 21045 -2129 • Tel: 410 / 884-3266 • Fax: 410 / 884-3267

MICHAEL S. KLASSEN, Ph.D., P.E.

EDUCATION:

Ph.D., Mechanical Engineering, University of Maryland, 1992.
M.S., Mechanical Engineering, University of Maryland, 1990.
B.S., Mechanical Engineering, University of Maryland, 1987.

PROFESSIONAL EXPERIENCE:

Vice President and Principal Research Engineer, Combustion Science & Engineering, Inc., Columbia, MD, 1998 to present.

Responsible for the design and execution of experimental and analytical projects in fire and combustion research. Technical lead for gas turbine combustor design. Developed analytical technique for prediction of flameholding potential in gas turbine combustors. Developed reduced chemical kinetic schemes for prediction of heat release and pollutant formation in gas turbine combustors. Developed analytical techniques for prediction of radiative loading in gas turbines for enhanced lifeing predictions of liners. Conducted small-scale experimental study to measure radiative loading of combustor walls to provide validation data for analytical study. Conducted small-, medium- and large-scale testing on the transmission of radiation and breakage properties of glazing materials. Provide engineering support for litigation cases. Conduct fire and hazard investigations.

Vice President and Chief Technical Officer, LPP Combustion LLC, Columbia, MD, 2007-present.

Developing and commercializing innovative technology for clean combustion of liquid fuels. Co-inventor of technology. Responsible for technical development of technology, working with staff of engineers to test, design and commercialize methodology and apparatus. Closely involved in business development, including company capitalization, organization and day-to-day operation.

Staff Engineer, Hughes Associates, Inc., Baltimore, MD, 1996-1997.

Designed and conducted experimental fire and combustion research. Involved in the testing and modeling of fire-suppression systems.

Visiting Asst. Professor/Postdoctoral Researcher, Purdue University, 1992- 1996.

Developed laser and optical diagnostic techniques for use in combustion applications. Utilized these techniques to investigate the formation of minor combustion species and pollutants in laminar and turbulent flames. Conducted experiments into the effect of pressure on nitric oxide (NO) formation in flames at pressures ranging from 1 to 15 atm. Local NO concentration measurements were made in laminar flames using laser-induced fluorescence (LIF) and used to evaluate the ability of current chemical kinetic mechanisms to predict NO formation in high-pressure flames. Instantaneous, local NO concentrations were also measured in premixed, turbulent jet flames which gave insights into the regions of NO formation in this type of flame and provided data for model validation. Further research involved the use of picosecond time-resolved laser-induced fluorescence (PITLIF) to the determine instantaneous, quantitative concentration of minor species in turbulent flames. This study involved the application of ultra-fast spectroscopic techniques

(resolution on the order of nanoseconds) in order to make time-series measurements of minor species concentrations in turbulent reacting flows. Lectured on introductory engineering thermodynamics.

Graduate Research Assistant, University of Maryland, 1989-1992.

Research involved the study of radiation properties and the flame structure of liquid-fuel pool flames. This work included measurements of the total radiative output, fuel burning rate and flame height for a variety of burner diameters (5 cm- 1 m). A new technique to measure radiative heat transfer from the flame to the fuel surface was developed. Instantaneous and simultaneous measurements of temperature, intensity and soot volume fraction were made using an optical pyrometric technique. Stochastic simulations using the measured instantaneous flame properties were employed for predictions of radiative output from the flame and the fuel burning rate.

Guest Researcher, National Institute of Standards and Technology, U.S. Department of Commerce, Center for Building and Fire Research, 1989 -1992.

Guest Researcher, Fire Research Institute, Department of Home Ministry, Tokyo, Japan, 1991.

Graduate Research Assistant, University of Maryland, 1988-1989.

Conducted research which investigated the transient cooling of hot surfaces by dropwise evaporation for use in fire suppression models. An infrared thermographic technique was developed to monitor the response of a heated low-conductivity surface to an impinging water droplet. Digital image processing techniques were utilized to extract the extent of cooling of the surface by the droplet and the transient surface temperature from the infrared data.

PROFESSIONAL REGISTRATION:

Registered Professional Engineer, Mechanical Engineering, License Number 23107 (Maryland).

PROFESSIONAL STANDING:

Member, The American Society of Mechanical Engineers

Member, The Combustion Institute

Member, AIAA

Member, Combustion and Fuels Committee, International Gas Turbine Institute

Vice Chairman, International Gas Turbine Institute (ASME) Combustion, Fuels and Emissions Committee (current)

Member, NGC+ Work Group on Interchangeability

HONORS:

Harry C. Bigglestone Award presented by *Fire Technology* (2007)

NFPA Harry C. Bigglestone Award for Excellence in Communication of Fire Protection Concepts, 2005.

PATENTS:

Ramotowski, M. J., Joklik, R., Fuller, C., Gokulakrishnan, P., Eskin, L., Gaines, G., Roby, R. J., Klassen, M. S., "Method and Apparatus for Conditioning Liquid Hydrocarbon Fuels", US Patent 8,702,420, 2014.

Eskin, L. D., Roby, R. J., Klassen, M. S., Ramotowski, M. J. "Integrated system and method for production and vaporization of liquid hydrocarbon fuels for combustion", US Patent 8,529,646, 2013.

Roby, R. J., Klassen, M. S., Schemel, C. F. "System for vaporization of liquid fuels for combustion and method of use", US Patent 8,225,611, 2012

Joklik, R. G., Roby, R. J., Klassen, M. S., Battaglioli, J. L., Hamer, A. J., Vashishat, D., "System and method for flame stabilization and control", US Patent 7,934,924, 2011.

Klassen, M., Gokulakrishnan, P., Fuller, C., Hamer, A., Ware, C., and Langdon, J., "System, Method and Apparatus for Hydrogen-Oxygen Burner in Downhole Steam Generator", US Patent 7770646, 2010.

Roby, R. J., Klassen, M. S., Schemel, C. F. "System for vaporization of liquid fuels for combustion and method of use", US Patent 7,770,396, 2010.

Roby, R., Klassen, M., and Schemel C., "System for vaporization of liquid fuels for combustion and method of use", U.S. Patent 7322198, 2008.

Joklik, R. G., Roby, R. J., Klassen, M. S., Battaglioli, J. L., Hamer, A. J., Vashishat, D., "System and Method for Flame Stabilization and Control", U.S. Patent No. 7,435,080, 2008.

Roby, R., Klassen, M., Eskin, L., Holton, M., and Straus, A., "Smoke alarm detector", U.S. Patent D545229, 2007.

Roby, R., Klassen, M., DuBois, J., Gaines, G., Ashley, E., "Method and apparatus for waking a person", U.S. Patent 7170397, 2007.

Roby, R., Klassen, M., and Schemel C., "System for vaporization of liquid fuels for combustion and method of use", U.S. Patent 7,089,745, 2006.

Roby, R., Klassen, M., Schemel, C., Vashishat, D., Holton, M., and Flint, K., "Method and apparatus for indicating activation of a smoke detector alarm", U.S. Patent 7015807, 2006.

SELECTED PUBLICATIONS:

Book Chapter

Gokulakrishnan, P. and Klassen, M. S. (2013), "NO_x and CO Formation and Control," in Gas Turbine Emissions, T. Lieuwen and V. Yang, (Eds.) New York, NY: Cambridge University, pp. 175-208.

Journal and Conference Publications

Boehmer, H.R., Klassen, M.S. and Olenick, S.M., "Fire Hazard Analysis of Modern Vehicles in Parking Facilities", Fire Technology, 2021, online first. <https://doi.org/10.1007/s10694-021-01113-1>

Boehmer, H., Klassen, M., and Olenick, S., "Modern Vehicle Hazards in Parking Structures and Vehicle Carriers", Proceedings of the International Conference on Fire in Vehicles (FIVE), December, 2020.

Olenick, S.M., Boehmer, H.R., and Klassen, M.S., "Door Messaging Strategies: Implications for Detection and Notification," Fire Technology, 2020, online first. <https://doi.org/10.1007/s10694-020-01049-y>.

Olenick, S.M., Boehmer, H., and Klassen, M.S. Door Messaging Strategies: Implications for Detection and Notification. NFPA Fire Protection Research Foundation report FPRF-2019-12. October 2019. <https://www.nfpa.org/News-and-Research/Data-research-and-tools/Detection-and-Signaling/Door-Messaging-Strategies-Implications-for-Detection-and-Notification>

Olenick, S.M., Boehmer, H., and Klassen, M.S., "Door Messaging Strategies: Implications for Detection and Notification". Extended Abstract. Proceedings of the NFPA Fire Protection Research Foundation Suppression, Detection and Signaling Research and Applications Symposium (SUPDET), 2019.

Havey, P., Munoz, M., Klassen, M.S., Holton, M.M., and Olenick, S.M., "Variability and Error Rates in Fire Alarm Audibility Measurements and Calculations," Fire Technology, 2018. Available online first <https://doi.org/10.1007/s10694-018-0755-6>

- Gokulakrishnan, P., Fuller, C. C. and Klassen, M. S. (2017), "Experimental and Modeling Study of C1 to C3 Hydrocarbon Ignition in the Presence of Nitric Oxide", J. Eng. Gas Turb. Power, Vol. 140, p. 041509.
- Gokulakrishnan, P., C. Fuller, M. Klassen, Y. Zhu, D. Davidson, R. Hanson and B. Kiel (2016), "Ignition of Light Hydrocarbon Mixtures Relevant to Thermal Cracking of Jet Fuels," 54th Aerospace Sciences Meeting, San Diego, CA, AIAA-2016-0661.
- Gokulakrishnan, P., Fuller, C. C., Klassen, M. S., Joklik, R. G., Kochar, Y. N., Vaden, S. N., Lieuwen, T. C. and Seitzman, J. M. (2014) "Experiments and Modeling of Propane Combustion with Vitiation" Combustion and Flame, Vol. 161; in press, DOI:10.1016/j.combustflame.2014.01.024.
- Gokulakrishnan, P., Joklik, R., Viehe, D., Trettel, A., Gonzalez-Juez, E. and Klassen, M. (2014), "Optimization of Reduced Kinetic Models for Reactive Flow Simulations", Journal of Engineering for Gas Turbines and Power, Vol. 136, p. 011503-1.
- Gokulakrishnan, P., Joklik, R., Viehe, D., Trettel, A., Gonzalez-Juez, E., and Klassen, M., Optimization of Reduced Kinetic Models for Reactive Flow Simulations, 2013 ASME / IGTI Turbo Expo, San Antonio, TX, Paper # GT2013-95215, 2013.
- Gokulakrishnan, P., Fuller, C. C., Joklik, R. G., and Klassen, M. S., "Chemical Kinetic Modeling of Ignition and Emissions from Natural Gas and LNG Fueled Gas Turbines", 2012 ASME / IGTI Turbo Expo, Copenhagen, Paper # GT2012-69902, 2012.
- Holton, M.M., Gokulakrishnan, P., Klassen, M. S, Roby, R. J. (2010), "Autoignition Delay Time Measurements of Methane, Ethane, and Propane Pure Fuels and Methane-Based Fuel Blends", Journal of Engineering for Gas Turbines and Power, Vol. 132, pp. 091502-1-9.
- Gokulakrishnan, P., Ramotowski, M. J., Gaines, G., Fuller, C., Joklik, R., Eskin, L. D., Klassen, M. S. and Roby, R. J. (2008), "A Novel Low NO_x Lean, Premixed, and Prevaporized Combustion System for Liquid Fuels", Journal of Engineering for Gas Turbines and Power, Vol. 130, pp. 051501:1-7.
- Gokulakrishnan, P., Gaines, G., Currano, J., Klassen, M. S. and Roby, R. J. (2007), "Experimental and Kinetic Modeling of Kerosene-Type Fuels at Gas Turbine Operating Conditions", Journal of Engineering for Gas Turbines and Power, Vol. 129, pp. 655–663.
- Zhang, W., Olenick, S.M., Klassen, M.S., Carpenter, D.J., Roby, R.J., and Torero, J.L., "A Smoke Detector Activation Algorithm for Large Eddy Simulation Fire Modeling," Fire Safety Journal, v.43, n.2, 2008.
- Ramotowski, M.J., Roby, R.J., Eskin, L.D., and Klassen, M.S., "Fuel Flexibility for Dry Low Emission Gas Turbines – Cleanly Burning Biofuels, Coal Liquids and Petroleum Fuels", PowerGen International, New Orleans, December 2007.
- Roby, R.J., Klassen, M.S., Eskin, L.D., Ramotowski, M.J., and Gaines, G.C, "Development of a System for Lean, Prevaporized, Premixed Combustion", presented at the 36th Turbomachinery Symposium, Houston, September 2007.
- Eskin, L.D., Roby, R.J., Klassen, M.S., and Ramotowski, M.J., "A Novel Approach for 'Clean' Power Generation Using Coal Liquids and the LPP Combustion Process in an Integrated Gasification Combined Cycle (IGCC) System", presented at the 24th Annual International Pittsburgh Coal Conference, Johannesburg, South Africa, September 2007.

- Gokulakrishnan, P., Ramotowski, M.J., Gaines, G., Fuller, C., Joklik, R., Eskin, L.D., Klassen, M.S., and Roby, R.J., "Experimental Study of NO_x Formation in Lean, Premixed, Prevaporized Combustion of Fuel Oils at Elevated Pressures", paper GT2007-27552, presented at the ASME Turbo Expo 2007: Power for Land, Sea and Air, Montreal, Canada, May 2007.
- Roby, R.J., Klassen, M.S., Eskin, L.D., and Ramotowski, M.J., "LPP Combustion – How to Burn Liquid Fuels as Cleanly as Natural Gas", presented at Electric Power 2007, Chicago, May 2007.
- Sutula, J., Klassen, M., Roby, R., Olenick, S., Gaines, G. and Torero, J., "Flame Extinction Based on a Critical Damköhler Number for the Assessment of Suppression Effectiveness in Reduced Gravity Environments," proceedings of the 5th International Seminar on Fire and Explosion Hazards, Edinburgh, Scotland, April 23-27, 2007.
- Olenick, S.M., Roby, R.J., Klassen, M.S., Zhang, W., Sutula, J.A., Worrell, C., Wu, D., D' Souza, V., Ashley, A., Dubois, J., Torero, J.L., and Streit, L., "The Role of Smoke Detectors in Forensic Fire Investigation and Reconstruction," Proceedings of the International Symposium on Fire Investigation Science and Technology (ISFI), 2006.
- Klassen, M. S.; Sutula, J. A.; Holton, M. M.; Roby, R. J.; Izbicki, T. Transmission Through and Breakage of Multi-Pane Glazing Due to Radiant Exposure, *Fire Tech.*, Vol. 42, No. 2, 79-107, 2006 .
- Olenick, S.M., Roby, R.J., Klassen, M.S., Zhang, W., Sutula, J.A., Worrell, C., Wu, D., D'Souza, V., Ashley, A., Dubois, J., Torero, J.L., and Streit, L., "The Role of Smoke Detectors in Forensic Fire Investigation and Reconstruction," Proceedings of the International Symposium on Fire Investigation Science and Technology (ISFI), 2006.
- Gokulakrishnan, P., Kwon, S., Hamer, A. J., Klassen, M. S., and Roby, R. J., "Reduced Kinetic Mechanism for Reactive Flow Simulation of Syngas/Methane Combustion at Gas Turbine Conditions", Submitted to GT2006, ASME Turbo Expo, Barcelona, Spain.
- Zhang, W., M.S. Klassen, and R.J. Roby, "Numerical Prediction of Smoke Detector Activation Accounting for Aerosol Characteristics," 8th International Symposium on Fire Safety Science, Beijing China, September 2005
- Ma, T., Olenick, S.M., Klassen, M.S., Roby, R.J., and Torero, J.L., "Carpet Under Fire: A Forensic View on the Role of Carpet (Porous Media) in Liquid Spill Fires", Harry C. Bigglestone Award Presentation, NFPA World Safety Conference and Exposition, Las Vegas, June, 2005.
- Gokulakrishnan, P., Klassen, M. S. and Roby, R. J. (2005), "Development of Detailed Kinetic Mechanism to Study Low Temperature Ignition Phenomenon of Kerosene", *Proceedings of IGTI*, ASME, Paper #GT2005-68268.
- Olenick, S.M., Zhang, W., Carpenter, D. J., Roby, R. J., and Klassen, S. M., "Verification and Validation of a Smoke Detector Activation Algorithm for the Fire Dynamics Simulator (FDS)", presented to the NFPA Fire Protection Research Foundation Fire Suppression and Detection Research Application Symposium, Orlando, January, 2005.
- Ma, T., Olenick, S. M., Klassen, M. S., Roby, R. J., and Torero, J. L., "Burning Rate of Liquid Fuel on Carpet (Porous Media)", *Fire Technology*, 40, 2004. (2005 Bigglestone Award)
- Roby, R.J., W. Zhang, G.C. Gaines, S.M. Olenick, M.S. Klassen, and J.L. Torero, "The Integration of a Smoke

Detector Model with Large Eddy Simulation Fire Modeling for Predicting Smoke Detector Activation in Microgravity,” Proceedings of Strategic Research to Enable NASA’s Exploration Missions Conference and Workshop Poster Session, June, 2004.

Klassen, M., Sutula, J., Holton, M., Roby, R., Izbicki, T., “The Evaluation of Life Safety Hazards Posed by Large Fires Outside Heavily Glazed Buildings,” presented at the 2003 NFPA World Safety Conference & Exposition, Dallas, Texas, May 20, 2003.

Zhang, W., M.S. Klassen, and R.J. Roby, “Turbulent Structure of the Flow Field in a One-Meter Diameter Methane Fire by Large Eddy Simulation,” 3rd joint meeting of the U.S. Sections of the Combustion Institute, University of Illinois at Chicago, Chicago, Illinois, March 16-19, 2003.

Zhang, W., A. Hamer, M. Klassen, D. Carpenter, R. Roby, “Turbulence statistics in a fire room model by large eddy simulation”, *Fire Safety Journal* 37, 721-752, 2002.

Ma, T., S. M. Olenick, M.S. Klassen, R.J. Roby and J. Torero, “Burning Rate of Liquid Fuel on Carpet (Porous Media)”, submitted to the IAFSS 7th International Symposium of Fire Safety Science (2002).

Stephen M. Olenick, Michael S. Klassen, and Richard J. Roby, “Validation Study of FDS for a High-Rack Storage Fire Involving Pool Chemicals,” presented to the NFPA 430 (Storage of Liquid and Solid Oxidizers) Technical Task Group, January, 2002

Holton, M.M., S.M. Olenick, M.S. Klassen, and R.J. Roby, “A Study of the Effectiveness of Passive Infrared Burglar Alarms to Detect Fires and Smoke,” presented at NFPA’s 6th *Fire Suppression & Detection Research Application Symposium*, Tampa, FL, January 2002.

Zhang, W., A.J. Hamer, M.S. Klassen, D.J. Carpenter, and R.J. Roby, “Verification of the Turbulence Statistics for Fire Dynamic Simulator in a Room Fire,” presented at 3rd Technical Symposium on Computer Applications in Fire Protection Engineering, Baltimore, MD, September 2001.

Olenick, S.M., M.S. Klassen, and R.J. Roby, “Validation Study of FDS for a High-Rack Storage Fire Involving Pool Chemicals,” presented at 3rd Technical Symposium on Computer Applications in Fire Protection Engineering, Baltimore, MD, September 2001.

Zhang, W., A.J. Hamer, M.S. Klassen, D.J. Carpenter, and R.J. Roby, “Turbulence Statistics in a Fire Room Model By Large Eddy Simulation,” presented at 2nd Joint Meeting of the U.S. Sections of the Combustion Institute, Oakland, CA, March 2001.

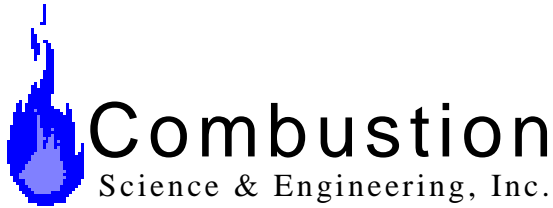
Klassen, M. S., Sutula, J. A., Holton, M. M., Roby, R. J., and Izbicki, T., “Window Breakage of Multi- Pane Glazing due to Radiant Exposure,” Proceedings of the *Fall Technical Meeting of the Eastern States Section of the Combustion Institute*, October 10-13, 1999.

Hamer, A.J., Roby, R.J., and Klassen, M.S., “Comparison of Reduced Chemical Kinetics Mechanisms for Pollutant Emissions Predictions in Gas Turbines,” presented at the ASME International Joint Power Generation Conference, Baltimore, MD, August 23-26, 1998.

Klassen, M. S., D. D. Thomsen, J. R. Reisel, N. M. Laurendeau, “Laser-induced Fluorescence Measurements of NO formation in High-Pressure Methane Flames”, *Combustion Science and Technology* **110-111**, 229-247 (1996).

Reichardt, T. A., M. S. Klassen, G. B. King, and N. M. Laurendeau, “Measurements of Hydroxyl Concentrations and

- Lifetimes in Laminar Flames using Picosecond Time-resolved Laser-induced Fluorescence", *Applied Optics*, in press (1996).
- Partridge, W. P. Jr., M. S. Klassen, D. D. Thomsen, N. M. Laurendeau, "Experimental Assessment of O₂ Interferences on LIF Measurements of NO in High-Pressure Lean Premixed Flames using Narrow-band and Broad-band Detection", *Applied Optics*, in press (1996).
- Reichardt, T. A., M. S. Klassen, G. B. King, and N. M. Laurendeau, "Real-time Acquisition of Laser-Induced Fluorescence Decays", *Applied Optics* **34**, 973-976 (1995).
- Klassen, M. S., B. D. Thompson, T. A. Reichardt, G. B. King and N. M. Laurendeau, "Flame Concentration Measurements using Pico-second Time-Resolved Laser-Induced Fluorescence", *Combustion Science and Technology* **97**, 391- 403 (1994).
- Hamins, A., S. J. Fischer, T. Kashiwagi, M. Klassen, and J. P. Gore, "Measurement of Heat Feedback to the Fuel Surface in Pool Fires", *Combustion Science and Technology* **97**, 37-62 (1994).
- Klassen, M. and J. P. Gore, "Temperature and Soot Volume Fraction Statistics in Toluene-Fired Pool Fires", *Combustion and Flame*, **93**, 270 - 278 (1993).
- Klassen M., J. P. Gore, A. Hamins, T. Kashiwagi, "Radiative Heat Feedback in a Toluene Pool Fire", *24th Symposium (International) on Combustion*, The Combustion Institute, Pittsburgh, 1713- 1719 (1992).
- Klassen, M., M. diMarzo, and J. Sirkis, "Infrared Thermography of Dropwise Evaporative Cooling", *Experimental Thermal and Fluid Science* **5**, 136-141 (1992).
- Klassen, M., J. P. Gore, and Y. R. Sivathanu, "Simultaneous Emission- Absorption Measurements in Toluene - Fueled Pool Flames: Mean and RMS Properties", *Combustion and Flame* **90**, 34 - 44 (1992).
- Hamins, A., M. Klassen, J. Gore, and T. Kashiwagi, "Estimate of Flame Radiance via a Single Location Measurement in Liquid Pool Flames", *Combustion and Flame* **86**, 223-228 (1991).
- Gore, J. P, M. Klassen, A. Hamins, and T. Kashiwagi, "Fuel Property Effects on Burning Rate and Radiative Transfer from Liquid Pool Flames", *Third International Symposium on Fire Safety Science*, Edinburgh, Scotland, 395 (1991).



8940 Old Annapolis Road • Suite L • Columbia • MD • 21045 -2129 • Tel: 410 / 884-3266 • Fax: 410 / 884-3267

ZACHARY W. SWITZER

EDUCATION:

B.S., Mechanical Engineering, University of Maryland, College Park, MD, May 2017

PROFESSIONAL EXPERIENCE:

Project Engineer, Combustion Science & Engineering, Inc., Columbia MD, 2021 – Present.

Responsible for designing and executing experimental projects in fire and combustion research. Experience in designing and fabricating experimental apparatuses and parts using CAD and machine tools. Participate in residential, commercial, and industrial fire and hazard investigations. Perform calculations, experimentation, and analysis supporting fire and carbon monoxide incident litigation. Responsible for creating industrial system design drawings and part models. Conducted system efficiency and improvement testing on liquid process and power systems. Manage UL code compliance and technical development for smoke alarm accessory technology SafeAwake.

Staff Engineer, Combustion Science & Engineering, Inc., Columbia MD, 2017 – 2021.

Engineering Technician, Combustion Science & Engineering, Inc., Columbia MD, 2016 – 2017.

Research Assistant, NAVAIR, Patuxent River, MD, 2013.

Conducted research, recorded, and analyzed data at a naval research lab in the area of Raman spectroscopy in order to improve naval gyroscope equipment.

Appendix C

Codes and Standards Matrices

NFPA 72® National Fire Alarm and Signaling Code®**Household**

Standard Text (or similar)	Edition									
	2022	2019	2016	2013	2010	2007	2002	1999	1996	1993
Faults in other systems or components shall not affect the operation of the fire alarm system.	29.10.7.5	29.10.7.5	29.7.7.4	29.7.7.4	29.7.6.4	11.7.6.4	11.7.6.4	8-2.1.4	----	----
Where common wiring is employed for a combination system, the equipment for other than the fire and carbon monoxide alarm system shall be connected to the common wiring of the system so that short circuits, open circuits, grounds, or any fault in this equipment or interconnection between this equipment and the fire and carbon monoxide alarm system wiring does not interfere with the supervision of the fire and carbon monoxide alarm system or prevent alarm or trouble signal operation.	29.10.7.6	29.10.7.6 (carbon monoxide added)	29.7.7.5	29.7.7.5	29.7.6.5	11.7.6.5	11.7.6.5	----	2-4.7.1	2-4.7.1 and notes it comes from NFPA 74-1989 4-7.1

NFPA 72® National Fire Alarm and Signaling Code®**Protected Premises (Commercial)**

Standard Text (or similar)	Edition									
	2022	2019	2016	2013	2010	2007	2002	1999	1996	1993
If the equipment is attached to the fire alarm system via separate pathways, then short circuits or open circuits in this equipment, or between this equipment and the fire alarm system pathways, shall not impede or impair the monitoring for integrity of the fire alarm system or prevent alarm, supervisory, or fire safety control signal transmissions.	23.8.4.4.2	23.8.4.4.2	23.8.4.3.2	23.8.4.3.2	23.8.4.3.1.2	----	----	----	----	----
Short circuits, open circuits, or grounds in this equipment or between this equipment and the fire alarm system wiring shall not interfere with the monitoring for integrity of the fire alarm system or prevent alarm, supervisory, or fire safety control signal transmissions.	----	----	----	----	----	6.8.4.3	6.8.4.3	Is part of 3-8.2.2	Is part of 3-8.13.2	Is part of 3-8.14.2 and notes it comes from NFPA 72-1990 3-6.2 and was modified
All non-fire alarm components of a combination system shall be listed for fire alarm use unless removal, replacement, failure, or maintenance procedure on any non-fire alarm hardware, software, or circuits does not impair the required operation of the fire alarm system.	----	----	----	----	----	6.8.4.4	Similar but slightly different language	Similar language in 3-8.2.3	Similar language in 3-8.13.3	Similar language in 3-8.14.3 and notes it comes from NFPA 72-1990 3-6.3
When a non-fire system is combined with the fire alarm system using a data transmission method such as EIA232 serial data, isolation of the interconnect circuitry is essential to proper operation. Methods for isolating the non-fire alarm system may include isolation wiring methods or a barrier to prevent failure of the fire alarm system functions due to transfer of wiring faults between the systems. It is also important to consider the adverse impact on the fire alarm system caused by excessive traffic on the communications link.	----	----	----	----	----	A.6.8.4.3	----	----		

UL 365 Police Station Connected Burglar Alarm Units and Systems

Standard Text (or similar)	Edition	
	4 th edition (1997) with changes through 9/17/2010	5 th edition (2018)
Equipment intended for combination burglar-alarm and fire-protective signaling systems is also expected to comply, with the Standard for Control Units for Fire-Protective Signaling Systems, UL 864.	1.6	1.6

UL 864 Control Units and Accessories for Fire Alarm Systems

Standard Text (or similar)	Edition	
	9 th edition (2003) with changes through 8/31/2012	10 th edition (2014) with changes through 3/29/2018
When a fire alarm system shares components, equipment, circuitry, and installation wiring with non-fire systems, short circuits, open circuits, or grounds in the non-fire system equipment or the connections between the non-fire system equipment and the fire alarm products shall not impair the required operation of the fire alarm system or prevent appropriate alarm, supervisory, or trouble annunciation and signaling, or unfaulted fire-safety control activation	56.1 – notes effective 12/31/2008	----
To determine compliance with 56.1, the operation, removal, replacement, failure, or maintenance procedure on any hardware, software, or circuit not performing any of the fire alarm system functions shall not cause loss of any of the fire alarm functions, including supervision, or prevent required alarm, supervisory, trouble, or fire-safety annunciation, signaling, or actuation.	56.2 – notes effective 12/31/2008	----
Short circuits or open circuits in the non-fire equipment or in the wiring between the non-fire equipment and the fire alarm system shall not impede or impair the monitoring for integrity of the fire alarm system as described in Common Performance and Monitoring for integrity – Protected-Premises Units/Systems Section 56, nor impede or impair any fire alarm signal transmissions or operations	----	61.1.7
Single ground faults in the non-fire alarm equipment shall not impede or impair the monitoring for integrity of the fire alarm system, or impede or impair any fire alarm, supervisory or trouble signal transmissions or operation.	----	61.1.8
The required operation of the fire alarm equipment shall not be impaired by any failure of the non-fire alarm equipment hardware, software or circuits, or by any maintenance procedure, including removal or replacement of defective equipment or powering down of the non-fire equipment.	----	61.1.9

UL 985 Household Fire Warning System Units

Standard Text (or similar)	Edition	
	5 th edition (2000) with changes through 10/31/2008	6 th edition (2015) with changes through 7/12/2018
When common wiring is used for combination systems, it shall be connected in such a manner that internal fault conditions (shorts, opens, grounds) in the nonfire alarm (burglary) system circuit wiring, or faults between the fire and nonfire alarm system circuits, will not interfere with the supervision of the fire alarm system or prevent intended alarm signal transmission.	Part of 1.4	Part of 1.4
In a combination control unit, separate circuits shall be used for fire alarm initiating devices and other than fire alarm (burglary) devices.	37.4	----
An open or ground fault in any circuit extending from a household control unit, other than the initiating device circuit, shall not affect the operation of the control unit except for the loss of the function extending from the circuit.	41.4	44.2.2
A fault condition, open ground, or short of other than a fire alarm circuit of a combination control unit shall not affect the fire-alarm signaling.	41.6	----
Short circuit or open circuit single faults in the non-fire equipment or in the wiring between the non-fire equipment and the fire alarm system shall not impede or impair the monitoring for integrity of the fire alarm system, nor impede or impair any fire alarm signal transmissions or operations.	----	41.3.1.3
The required operation of the fire alarm equipment shall not be impaired by any failure of the nonfire alarm equipment hardware, software or circuits, or by any maintenance procedure, including removal or replacement of defective equipment or powering down of the non-fire equipment.	----	41.3.1.6

UL 1023 Household Burglar-Alarm System Units

Standard Text (or similar)	Edition	
	6 th edition (1996) with changes through 7/1/2013	7 th edition (2017)
These requirements also apply to the use of combination systems, such as a combination fire-burglar-alarm system control unit. A combination system is connected in such a manner that fault conditions (shorts, open, grounds) in the burglar-alarm system circuit wiring, or interconnection between the fire- and burglar-alarm system circuits, will not interfere with the supervision of the fire alarm system or will not prevent intended alarm signal operation.	1.3	1.3
A combination household fire and burglar alarm system shall also comply with the Standard for Household Fire Warning System Units, UL 985.	1.3.1 – notes added June 1, 1999	1.4

Appendix D

UL Letter



December 18, 2020

Mr. Jeffrey D. Zwim
President
IDS Research and Development, Inc.
46 W. Clinton
Tenafly, NY 07670

via e-mail to jeffzwim@alarmexpert.com

Re: Your October 15, 2020 Letter

Dear Mr. Zwim:

UL has reviewed both your October 15, 2020 letter and the accompanying "forensic expert report". This is in response to the technical matters you raised, however, regarding your complaint about UL public relations team visiting your public LinkedIn page, I will simply note that this is publicly available information

Regarding your claims that UL has not properly performed its certification functions, we have to respectfully disagree based on the following points regarding to the application of UL and NFPA Standards and Codes governing these products:

- Both Chapter 29 of NFPA 72, the National Fire Alarm and Signaling Code, and UL 985 stipulate that a wire to wire (short circuit) fault is to be applied only where non-fire alarm equipment is directly interconnected to the fire alarm system.
 - UL 985, 6th edition published 2015 (Nov 2019 effective date) states:
Section 41.3.1.3 *Short circuit or open circuit single faults in the non-fire equipment or in the wiring between the non-fire equipment and the fire alarm system shall not impede or impair the monitoring for integrity of the fire alarm system, nor impede or impair any fire alarm signal transmissions or operations.*
- Circuits interconnecting only fire alarm equipment are not required by UL 985 to be subjected to a short circuit fault. This includes your example of an attack by fire, specifically resulting in a short circuit fault on the data/power bus. Neither NFPA 72, Chapter 29, nor UL 985 include requirements with respect to household fire alarm system pathway survivability to attack by fire.

As a UL STP member, you are aware that you can submit a proposal to the appropriate UL STP(s) for their consideration to add such a requirement.

UL applies clause 41.3.1.3 as follows:

- Products/devices may additionally include security listing in addition to fire alarm listing when both fire and security signals can be processed by the product. An example includes zone expanders. These products connected directly to the communication/power bus are considered fire alarm products, even where only separate security devices are interconnected to them. In this instance the combination fire and security product/device is functioning as an isolation device. The device is isolating non-fire alarm listed devices from the communication/power bus. This alleviates the need to conduct a short circuit test on the communication/power bus.
- When non-fire alarm devices are directly connected to fire alarm listed devices/products, which are in turn connected to the communication bus, short circuit faults are applied directly to the non-fire alarm

UL LLC
333 Pfingsten Road, Northbrook, IL 60062-2096 USA
T: 847.272.8800 / F: 847.272.8129 / W: UL.com

Page 2
Mr. Jeffrey D. Zwim
December 18, 2020

devices and the interconnecting wiring to the fire alarm listed devices/products. Compliance is confirmed when the short circuit faults do not affect fire alarm and/or carbon monoxide alarm signaling operation.

- A short circuit fault is applied to the communication/power bus when non-fire alarm devices (for example when a system incorporates a Listed security only keypad or addressable PIR) are directly connected to the communication/power bus.
- A short circuit fault is also applied to output power supply circuits when non-fire alarm equipment is directly connected to those circuits. Typically, this includes security devices such as passive infrared motion sensors.

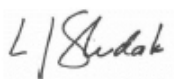
While your forensic report focuses on Chapter 29 of NFPA 72 and UL 985/UL 1023, the installation and performance requirements for commercial premises are addressed in NFPA 72, excluding Chapter 29, and UL 864, Standard for Safety Control Units and Accessories for Fire Alarm Systems. Chapters 10, 12, 23, 24 and 26 of NFPA 72 and UL 864 do not include identical requirements to those in Chapter 29 of NFPA 72 and UL 985, respectively.

With respect to commercial premise fire alarm control unit system installation, sections 23.10 and 24.3.14.4 of NFPA 72 – 2019 are clear that pathway survivability to attack by fire is applicable only for systems employing relocation or partial evacuation of occupants. Associated section 12.4 of NFPA 72 – 2019 stipulates the pathway survivability to attack by fire can be accomplished by physical protection of the pathway or the use of CI cable rather than by inherent operational capabilities of the fire alarm systems.

Lastly, and equally importantly, UL has not received information of field incidents associated with these products. If you have personal knowledge of UL Listed products failing in the field, these instances should be reported to our Market Surveillance team. This way UL can independently review those alleged failures.

We encourage you to continue to avail yourself to the UL STP Standards development process. As a result, we have also forwarded your letter to Ms. Scanlon and the accompanying “expert report” to Diane Haithcock, the STP chair for UL 985.

Very truly yours,



Lawrence J Shudak, P.E.
Principal Engineer – Life Safety Technologies, UL LLC

Cc: Dwayne Sloan, PDE Director, UL LLC

UL LLC
333 Pfingsten Road, Northbrook, IL 60062-2096 USA
T: 847.272.8800 / F: 847.272.8129 / W: UL.com

Appendix E

Merton Bunker Letters



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To Whom It May Concern:

My name is Merton Bunker, PE, CFII, DBIA and I am the President of Merton Bunker and Associates in Stafford, Virginia. I have attained extensive and specialized education, skill, knowledge, training, experience and credentials in the fire alarm industry, UL Standards, NFPA 70 *National Electrical Code*[®], and NFPA 72 *National Fire Alarm and Signaling Code*[®]. I hold a Bachelor of Science in Electrical Engineering (BSEE) and a Master of Science in Engineering Management (MSEM). I have 34 years of engineering experience including 7 years at the National Fire Protection Association (NFPA).

From 1994 to 2001, I was employed by the National Fire Protection Association in Quincy MA, where I was staff liaison to NFPA 72 and other NFPA standards. As staff liaison, I was also the co-editor of the NFPA 72 Handbook[®]. Furthermore, I was the Chief Electrical Engineer for the NFPA being responsible for the development of the *National Electrical Code*[®] from 1998 to 2001. I am the current chair of the NFPA 72 Correlating Committee and serve on the Technical Committee on Protected Premises Signaling Systems. Finally, I have instructed NFPA's fire alarm code seminars since 1994.

I am a licensed professional engineer in eleven (11) states (ME, NH, MA, MD, DC, PA, VA, IN, NC, GA, FL). I am Certified Fire Investigator (NAFI & Pro Board), a Master Electrical Inspector (IAEI), and I conduct forensic investigations.

Against the foregoing backdrop, I have been retained to peer review and technically analyze the Expert Report of Jeffrey D. Zwirn, President of IDS Research and Development, Inc. Upon the conclusion of my analysis, I was retained to provide expert opinions within a reasonable degree of professional, fire alarm science and engineering certainty. As part of my investigation I forensically analyzed and technically reviewed UL-1023, UL-985, UL-365, UL-864- 10th Edition, NFPA 70, and NFPA 72. Each of the editions which I relied upon for UL and NFPA Standards are the same editions that Mr. Zwirn has incorporated into the Standards and Codes Matrix Sections of the Zwirn Expert Report. Furthermore, I forensically tested an exemplar single data-bus control panel following the codes and standards referenced in the Zwirn Expert Report.

EXPERT OPINIONS:

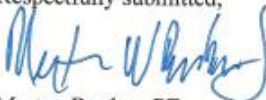
- 1) I technically duplicated, validated and verified what Mr. Zwirn opined with regards to the multitude of dangerous and unreliable "non-conforming" listed equipment which was sold, manufactured and/or installed for the public under the respective listings of UL-1023, UL-985, National Electrical Code and National Fire Alarm and Signaling Code.

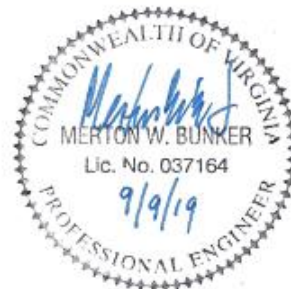
22 Gray Birch Ln | Stafford, Virginia 22554 | 540.533.5579 | mwb@mertonbunker.com

- 2) None of the control panel equipment tested complied with the required codes and standards extensively elaborated to in Mr. Zwirn's Expert Report. Consequently, all single data-bus control panels are non-conforming and require immediate recall and/or there needs to be a technical solution which can accomplish the task of ensuring strict compliance with each of the applicable and mandated codes and standards for household and commercial burglar and fire alarm control panels.
- 3) Failure to comply with the equipment manufacturer's specifications and the listings of the control panel violates the National Electrical Code. Until such time that all of the installed and/or manufactured control panels can be redesigned to actually be in compliance with each of the represented and referenced codes and standards as subsumed in the Zwirn Expert Report, the following steps need to be immediately taken:
 - a. Authorities having jurisdiction across the country and around the world need to be put on notice immediately.
 - b. The Consumer Product Safety Commission (CPSC) should be notified of the identified dangers of the non-conforming control panels.
 - c. All of the affected control panels should be immediately corrected.
 - d. All of the affected consumers and businesses where these control panels are installed should be put on notice that immediate corrective action is required since the control panels are non-conforming equipment.
- 4) None of these control panels can be deemed to be reliable or safe.
- 5) Non-conforming equipment substantially increases the risks of property loss, serious personal injury and/or death to occupants within the premises during an intrusion, fire, smoke and carbon monoxide emergency event.
- 6) A comprehensive and corrective action plan needs to be instituted immediately.

The recipient of this report is hereby prohibited from utilizing it for any purpose other than what it was intended for.

Respectfully submitted,


Merton Bunker, PE



22 Gray Birch Ln | Stafford, Virginia 22554 | 540.533.5579 | mwb@mertonbunker.com



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To Whom It May Concern:

I have reviewed Mr. Zwirn's demonstrative testing video of the Johnson Controls Power Series Pro Control Unit. In my opinion, Mr. Zwirn's testing demonstrates that the equipment does not comply with UL 985, UL 1023, and NFPA 72, *National Fire Alarm and Signaling Code*®.

In my opinion, the writings in the communications from both Johnson Controls, dated November 27, 2020, and from Underwriters Laboratories, Inc. (UL) dated December 18, 2020 respectively to Mr. Zwirn do not change the findings by Mr. Zwirn, in that he has opined that the Power Series Pro Control Unit is non-conforming and does not comply with UL standards and NFPA 72.

This opinion is based on the language found in the following referenced documents, included as Annex I of this letter.

- NFPA 72: Sections 29.10.7.5 and 29.10.7.6
- UL 985: Household Fire Warning System Units 6th Edition Sections
- UL 1023: Household Burglar-Alarm System Units, 6th and 7th Editions

UL 985, UL 1023, and NFPA 72 have similar language relating to faults on common system wiring. Non-fire alarm equipment on a combination system that is connected to the common wiring (e.g., the data bus or CORBUS) cannot prevent any supervision of the system or prevent alarm signal operation. Mr. Zwirn's video clearly shows the loss of alarm signal capabilities during a short circuit condition on the common data bus. Neither keypad functioned during the alarm condition and the alarm signal was not transmitted to the supervising station. In my opinion this is a violation of the standards in Annex I attached to this letter.

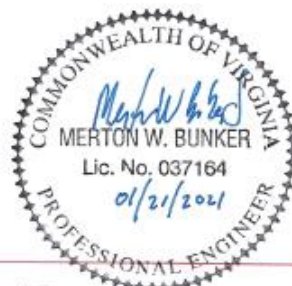
My expert opinions are based on my specialized education, skill, knowledge, training, and experience in Fire Protection Engineering and my involvement in NFPA 72 as an employee of the National Fire Protection Association (NFPA) and as staff liaison for NFPA 72. A current copy of my curriculum vitae is attached.

Finally, I rely on Mr. Zwirn's 43-page Expert report on the data-bus danger dated April 3, 2019 and my findings as set forth in my peer reviewed Expert report dated September 9, 2019.

The foregoing opinions are held to a reasonable degree of Professional, Engineering, UL and NFPA 72 certainty.

Respectfully submitted,


Merton Bunker, PE



22 Gray Birch Ln | Stafford, Virginia 22554 | 540.533.5579 | mwb@mertonbunker.com